Health Risk Behaviors in the State of Michigan

2011 Behavioral Risk Factor Survey
25th Annual Report

Michigan Department of Community Health

MDCH

Rick Snyder, Governor
James K. Haveman, Director

Michigan Department
of Community Health

MDCH

Rick Snyder, Governor
James K. Haveman, Director

2011 Behavioral Risk Factor Survey

Health Risk Behaviors in the State of Michigan

www.michigan.gov/brfs

Printed October 2012

RICK SNYDER
Governor, State of Michigan

JAMES K. HAVEMAN
Director, Michigan Department of Community Health

JEAN C. CHABUT
Deputy Director
Public Health Administration
Michigan Department of Community Health

CORINNE E. MILLER, PHD
Director, Bureau of Disease Control, Prevention, and Epidemiology
Michigan Department of Community Health

SARAH LYON-CALLO, MA, MS
Director, Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology
Michigan Department of Community Health

CHRIS FUSSMAN, MS
Author, Chronic Disease Epidemiology Unit
Michigan Department of Community Health

Michigan Department of Community Health

MDCH

Rick Snyder, Governor
James K. Haveman, Director

Table of Contents

BRFSS Methods

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of Michigan adults aged 18 years and older that is conducted through a collaborative effort among the Division of Behavioral Surveillance (DBS) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Community Health (MDCH). Michigan BRFSS (MiBRFSS) data contribute to the CDC Behavioral Risk Factor Surveillance System (BRFSS) that is conducted within every state, the District of Columbia, and within several U.S. territories.

Due to increases in the utilization of cell phone communication, **2011 marks the first year in which the MiBRFS collected data from both landline and cell phone respondents**. The sample of landline telephone numbers was selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density, listedness and population density of African Americans. The sample of cell phone numbers was randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange within the State of Michigan.

To allow for the incorporation of cell phone data and to improve the accuracy of prevalence estimates based on MiBRFS data, **a new weighting methodology know as iterative proportional fitting or raking, was implemented in 2011**. Estimates based on this new weighting methodology were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of Michigan adults by telephone source (landline or cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status.

Important Disclaimer for 2011

Due to the BRFSS methodology changes described above, the 2011 MiBRFS estimates should not be compared to MiBRFS estimates from previous years. Furthermore, these methodology changes may impact the magnitude of many of the MiBRFS estimates, and thus the 2011 estimates should be considered the new BRFSS baseline. These methodology changes will cause breaks in BRFSS trends, but will also greatly improve the accuracy, coverage, validity, and representativeness of the Michigan BRFSS. For more information regarding these changes, please visit the following website: http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html.

Prevalence estimates and asymmetric 95% confidence intervals (95% CIs) were calculated using SAS-Callable SU-DAAN (version 10.0.1), a statistical computing program that was designed for analyzing data from multistage sample surveys.[1] 95% CIs for analyses that do not appear within the topic-specific tables and figures are included in the text within either parentheses or brackets. If the 95% CIs for two estimates from different subpopulations or different survey years did not overlap, they were considered to be statistically different. Unless otherwise specified, respondents who answered that they did not know or refused to answer were not included in the calculation of estimates. For comparison purposes, the median estimates from all 50 states and the District of Columbia were used as national estimates.

In addition to this report, the MiBRFSS releases several additional publications each year. These publications provide statewide health estimates for Michigan adults as well as estimates among demographic and geographic subpopulations. *MiBRFSS Surveillance Briefs* are also published on several occasions throughout the year and highlight new topical data from the MiBRFSS. All of these publications can be found on the MiBRFSS website (www.michigan.gov/brfs).

Sample Results for the 2011 MiBRFS

A total of 136,290 numbers were used for the landline portion of the 2011 MiBRFS. The total number of eligibles was 14,120, of which 9,308 resulted in a completed or partially completed landline interview; 97,640 were ineligible; and 24,530 were of unknown eligibility. An additional 33,780 numbers were used for the cell phone portion of the 2011 MiBRFS. The total number of eligibles was 2,288, of which 1,741 resulted in a completed or partially completed cell phone interview; 11,089 were ineligible; and 20,403 were of unknown eligibility.

The CASRO response rate is a measure of respondent contact and cooperation. The CASRO response rate for the landline portion of the 2011 MiBRFS was 55.2%, while the response rate for the cell phone portion of the survey was 32.0%. The overall weighted CASRO response rate (landline and cell phones combined) for the 2011 MiBRFS was 50.6%.[2] The U.S. median response rates for the 2011 BRFSS were not available at the time of publication.

Over the past several years, MDCH has been able to maintain or increase the annual number of completed interviews for the MiBRFS. A larger annual sample size increases the utility of the survey by providing more precise estimates, allowing for increased number of topics to be covered each year, and enabling the calculation of estimates for more demographic and geographic subpopulations.

Number of Interviews
Michigan BRFS 1991-2011
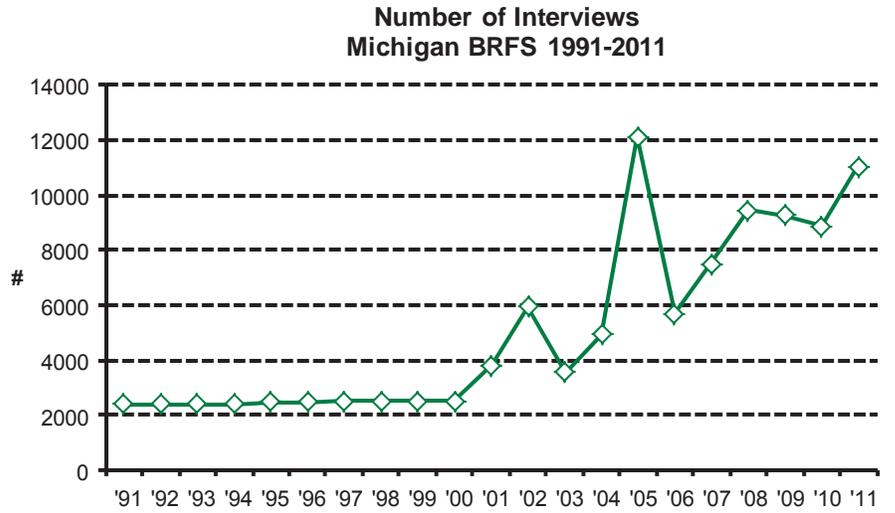
This report presents estimates from the 2011 MiBRFS, a statewide landline and cell phone survey of Michigan residents aged 18 years and older. It is the only source of state-specific, population-based estimates of the prevalence of various health behaviors, medical conditions, and preventive health care practices among Michigan adults. The survey findings are used by public health agencies, academic institutions, non-profit organizations, and others to develop programs that promote the health of Michigan citizens.

All of the results from the 2011 MiBRFS presented within this report have been weighted as described in the methods section and can be interpreted as prevalence estimates among the Michigan adult population. Due to significant changes in the BRFSS methodology, these estimates should not be compared to MiBRFS estimates from previous years.

Selected Risk Factors - 2011 CDC BRFSS
U.S. vs. Michigan
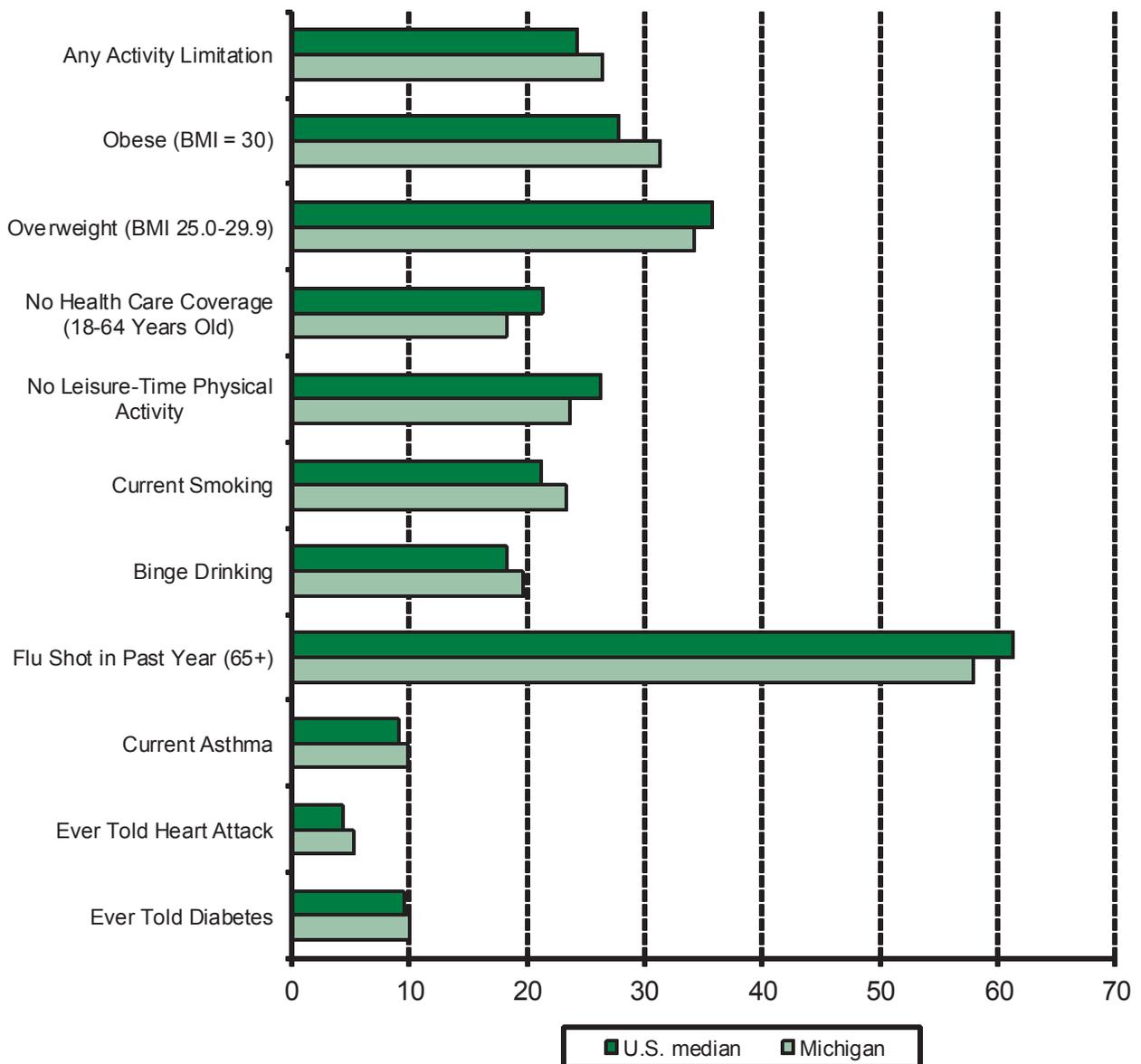
Public Health Implications of Findings

A number of themes emerge from the findings of the 2011 MiBRFS that have implications for public health.

� Obesity is a major risk factor among Michigan adults.

In 2011, an estimated 31.3% of Michigan adults were considered obese. The prevalence of obesity among Black, non-Hispanic adults (41.0%) is nearly 40% higher than the obesity prevalence among White, non-Hispanic adults (29.7%). The obesity prevalence among Michigan adults is currently only 0.7% above the HP 2020 obesity goal of 30.6%, but the overweight and obesity epidemic is still a major problem in Michigan with an estimated 65.5% of Michigan adults being classified as either overweight or obese. As the prevalence of overweight and obesity increases within the Michigan adult population, the prevalence of chronic diseases associated with obesity, such as diabetes, cardiovascular disease, and arthritis, is also increasing. MDCH has a number of programs designed to decrease obesity, increase physical activity and promote healthy eating among Michigan adults and children.

✄ Michigan adults participating in both aerobic and muscle strengthening activities is low.

In 2011, an estimated 19.7% of Michigan adults reported that they had met both the aerobic physical activity and muscle strengthening components of the new physical activity guideline. When assessing each component individually, an estimated 53.5% of Michigan adults met the aerobic physical activity guideline, while only 28.8% met the muscle strengthening guideline. The Michigan Nutrition, Physical Activity and Obesity Program continues to develop programs that focus on increasing physical activity among the entire Michigan population.

✄ Binge drinking is an important problem especially among younger adults.

In 2011, an estimated 19.7% of Michigan adults reported binge drinking on at least one occasion within the past month. The prevalence of binge drinking among males is over two times greater than the binge drinking prevalence among females. The prevalence of binge drinking among the Michigan adult population was highest within the 18-24 year old (30.8%) and 25-34 (30.6%) year old age categories. Furthermore, Michigan adults who reported binge drinking also reported that they participated in binge drinking activities on an average of 4.5 times per month. MDCH has policies and programs in place to help curb binge drinking within adolescents and young adults.

✄ The number of Michigan adults receiving routine health checkups is low.

In 2011, an estimated 66.5% of Michigan adults reported that they had received a routine medical checkup within the past year. The prevalence of having a routine checkup within the past year was significantly lower among males (61.3%) than females (71.3%), and Black, non-Hispanic adults (75.2%) reported a higher prevalence than White, non-Hispanics (65.6%). It appears that one of the main driving forces behind the low percentage of Michigan adults receiving a routine medical checkup is health insurance status. The prevalence of having received a routine checkup within the past year among insured adults (71.6%) is nearly twice as high as the routine checkup prevalence of uninsured adults (38.5%). MDCH recently released the Michigan Health and Wellness 4 X 4 Plan that will help address this issue.

✄ Diabetes affects 1 in 10 Michigan adults, including 1 in 5 adults over 65 years of age.

In 2011, an estimated 10.0% of Michigan adults reported that they had ever been told by a doctor that they had diabetes. The prevalence of diabetes among Black, non-Hispanic adults (12.7%) is nearly 34% greater than the diabetes prevalence among White, non-Hispanic adults (9.5%). The prevalence of diabetes among the Michigan adult population was highest within the 65-74 year old (21.5%) and 75+ year old (21.1%) age categories. Despite steady decreases in federal funding, the MDCH Diabetes and Other Chronic Diseases Section continues to partner with several internal and external coalitions, such as the Diabetes Partners in Action Coalition, to work toward reducing the impact of diabetes in Michigan.

Future of the Michigan Behavioral Risk Factor Survey

The target sample size for the 2012 MiBRFS is 10,000 total completed interviews. Of these 10,000 interviews, 8,000 will be completed with landline respondents, while the remaining 2,000 will be completed with cell phone-only or cell phone-mostly respondents. The 2012 questionnaire will include approximately 50 state-added questions on 14 topics, such as chronic obstructive pulmonary disease, infertility treatment, mental illness, genomics, and tobacco cessation. The full 2012 MiBRFS questionnaire is available on the MiBRFSS website (www.michigan.gov/brfs).

The BRFSS continues to adapt to challenges and expand its utility. The representativeness and validity of MiBRFS estimates has been improved. For example, due the drastic increase in the utilization of cell phone communication, the BRFSS now collects data from cell phone respondents. Furthermore, the CDC has implemented a new raking weighting methodology so that BRFSS estimates are more representative than ever before. Michigan has also expanded the utility of the MiBRFS through the following projects:

- The maintenance of a larger MiBRFS sample size will allow for somewhat more precise estimates for Hispanics, especially when multiple years of data are combined.
- In 2012, standalone BRFS-like oversample surveys are being conducted among the Hispanic and Asian American populations within Michigan. These surveys will provide new data to populations that are underrepresented within the statewide Michigan BRFS.
- Since 2005, questions have been included that randomly select one child in each household and obtain demographic characteristics of that child. This information allows us to ask health-related questions about this child and then to calculate estimates for childhood conditions, such as asthma.
- An Asthma Call-Back survey that follows up on children and adults who were identified as having asthma during the BRFS interview has been conducted since 2005, allowing for collection of more detailed information on asthma management, clinical care, and impact of the disease on people's lives. It is anticipated that this methodology could be useful for other subpopulations in the future.
- The MiBRFSS is a main source of data for the priority chronic disease indicators that are used to support Michigan's Coordinated Chronic Disease Prevention and Health Promotion State Plan.
- The MiBRFSS is the source for seven of the twenty indicators included within the Michigan Health and Wellness Dashboard. This project provides a quick assessment of the health and wellness of Michigan residents.

In conclusion, the MiBRFS continues to serve the needs of public health officials, health care providers, researchers and local and state level policy makers, while presenting a number of opportunities for expanding our understanding of the risk factors and preventive behaviors for the major causes of disease and disability in Michigan.

General Health Status

Self-assessed health is a measure of how a person perceives their own health. Self-assessed health status has been validated as a useful indicator of health among different populations and allows for broad comparisons across a variety of health conditions.[3]

♦ In 2011, an estimated 17.2% of Michigan adults reported that their general health was either fair or poor.

♦ Fair or poor general health increased with age and decreased with increasing household income level.

♦ The prevalence of fair or poor general health was similar by gender.

♦ White, non-Hispanic adults (15.7%) reported a significantly lower prevalence of fair or poor general health than both Black, non-Hispanics (24.5%) and Hispanics (25.5%).

♦ Insured adults (16.5%) reported a significantly lower prevalence of fair or poor health than uninsured adults (21.5%), while disabled adults (39.5%) reported a significantly higher prevalence than non-disabled adults (8.3%).

♦ Prior to the BRFSS methodology changes, the prevalence of fair or poor general health among Michigan adults was stable over time and comparable to the U.S. median prevalence. In 2011, the Michigan prevalence of fair or poor general health (17.2%) remained comparable to the U.S. median prevalence (17.0%).

General Health, Fair or Poor[a]

Demographic Characteristics	%	95% Confidence Interval
Total	**17.2**	**(16.2-18.3)**
Age		
18 - 24	7.8	(5.5-10.9)
25 - 34	13.5	(10.9-16.6)
35 - 44	15.1	(12.5-18.1)
45 - 54	19.0	(16.6-21.6)
55 - 64	21.3	(19.0-23.7)
65 - 74	21.0	(18.4-23.9)
75 +	26.7	(23.4-30.3)
Gender		
Male	16.9	(15.4-18.6)
Female	17.5	(16.2-19.0)
Race/Ethnicity		
White non-Hispanic	15.7	(14.6-16.9)
Black non-Hispanic	24.5	(21.2-28.2)
Other non-Hispanic	14.3	(11.0-18.3)
Hispanic	25.5	(18.4-34.3)
Household Income		
< $20,000	32.4	(29.3-35.7)
$20,000 - $34,999	23.0	(20.5-25.8)
$35,000 - $49,999	12.9	(10.7-15.5)
$50,000 - $74,999	9.5	(7.5-11.9)
≥ $75,000	5.8	(4.5-7.4)
Health Insurance		
Insured	16.5	(15.4-17.6)
Uninsured	21.5	(18.4-25.0)
Disability		
Disabled	39.5	(37.0-42.1)
Not disabled	8.3	(7.3-9.3)

[a] Among all adults, the proportion who reported that their health, in general, was either fair or poor.
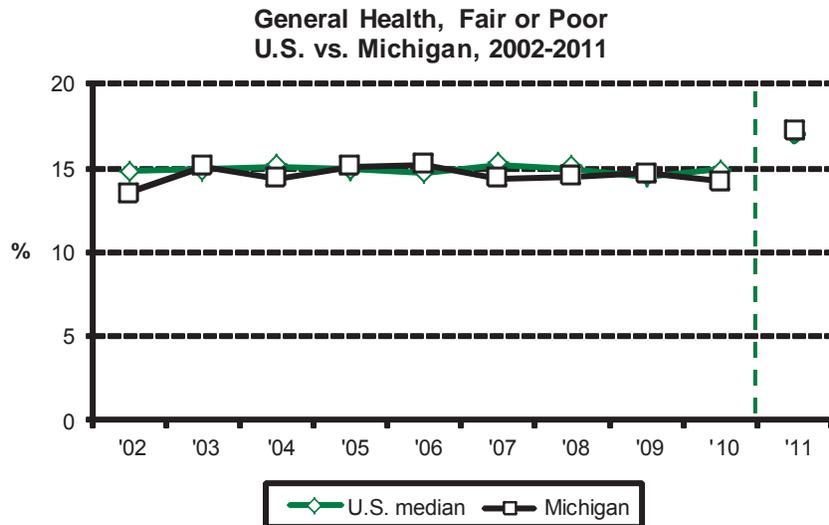
General Health, Fair or Poor
U.S. vs. Michigan, 2002-2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Quality of Life

Physically and mentally unhealthy days measure the number of days within the past 30 days that individuals rate their physical and mental health as not good. Poor physical and mental health was defined as 14 or more days within the past 30 days in which the adult respondent rated their physical and mental health as not good.

♦ In 2011, an estimated 13.1% of Michigan adults reported poor physical health, and 13.1% reported poor mental health.

♦ Poor physical health increased with age, while poor mental health decreased with age

♦ Both poor physical health and poor mental health decreased with increasing household income level.

♦ The prevalence of poor physical health and poor mental health were similar by both gender and race/ethnicity.

♦ Uninsured adults (20.5%) were more likely to have reported poor mental health than insured adults (11.8%).

♦ Disabled adults (35.4% and 25.0%, respectively) were more likely to have reported both poor physical health and poor mental health than insured adults (4.5% and 8.3%, respectively).

♦ Prior to the BRFSS methodology changes, the prevalence of poor physical health and poor mental health among Michigan adults remained stable over time and comparable to one another. The new 2011 baseline estimates for these indicators are also comparable to one another.

Demographic Characteristics	Poor Physical Health[a]		Poor Mental Health[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**13.1**	**(12.2-14.1)**	**13.1**	**(12.1-14.2)**
Age				
18 - 24	5.4	(3.4-8.3)	16.6	(13.1-20.8)
25 - 34	8.3	(6.3-11.0)	13.6	(11.0-16.9)
35 - 44	11.0	(8.8-13.7)	17.9	(15.1-21.1)
45 - 54	16.1	(13.9-18.6)	14.0	(12.0-16.2)
55 - 64	17.8	(15.7-20.2)	11.1	(9.5-13.0)
65 - 74	14.1	(12.1-16.3)	7.7	(6.2-9.7)
75 +	20.8	(17.6-24.3)	5.3	(3.7-7.7)
Gender				
Male	11.9	(10.6-13.4)	11.8	(10.4-13.4)
Female	14.2	(12.9-15.5)	14.4	(13.0-15.8)
Race/Ethnicity				
White non-Hispanic	12.5	(11.5-13.6)	12.9	(11.8-14.1)
Black non-Hispanic	15.6	(12.9-18.8)	13.4	(10.9-16.4)
Other non-Hispanic	12.6	(8.9-17.5)	14.5	(10.6-19.7)
Hispanic	14.5	(9.0-22.4)	17.3	(11.7-25.0)
Household Income				
< $20,000	21.8	(19.1-24.8)	24.6	(21.7-27.8)
$20,000 - $34,999	15.0	(12.9-17.4)	14.2	(12.0-16.7)
$35,000 - $49,999	9.0	(7.3-11.1)	9.9	(7.9-12.4)
$50,000 - $74,999	10.9	(8.8-13.5)	8.0	(6.1-10.4)
≥ $75,000	5.9	(4.6-7.6)	6.5	(5.0-8.3)
Health Insurance				
Insured	13.0	(12.0-14.1)	11.8	(10.8-12.9)
Uninsured	13.4	(11.0-16.3)	20.5	(17.3-24.0)
Disability				
Disabled	35.4	(32.9-38.0)	25.0	(22.7-27.5)
Not Disabled	4.5	(3.9-5.3)	8.3	(7.3-9.4)

[a] Among all adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days.
[b] Among all adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days.

Poor Physical and Mental Health Michigan, 2003-2011
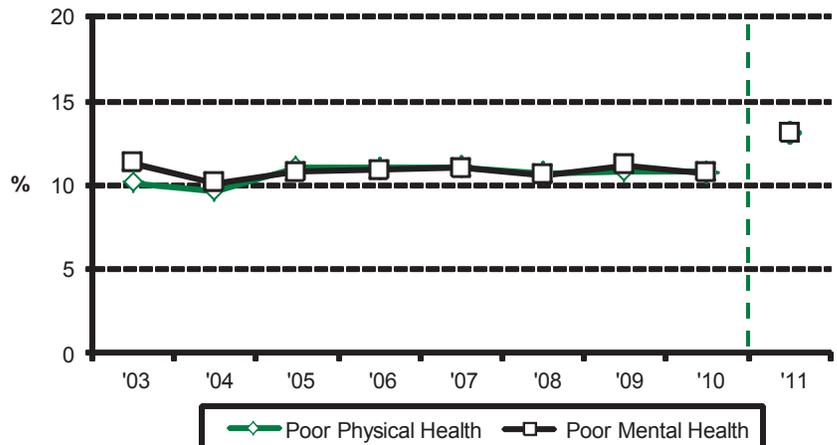
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Disability

Through the Americans with Disabilities Act, an individual with a disability is defined as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history of such an impairment, or a person who is perceived by others as having such an impairment.[4]

♦ In 2011, an estimated 28.2% of Michigan adults reported being disabled, which was defined as being limited in any activities because of physical, mental, or emotional problems or requiring the use of special equipment, such as a cane, a wheelchair, a special bed, or a special telephone due to a health problem.

♦ When looking at each component of the disability indicator individually, an estimated 26.4% of Michigan adults reported being limited in their activities, while 8.4% reported that they required the use of special equipment due to a health problem.

♦ The prevalence of disability increased with age and decreased with increasing household income level.

♦ Females (30.1%) reported a significantly higher prevalence of disability than males.

♦ The prevalence of total disability was similar by race/ethnicity, but Black, non-Hispanics (12.7% [95% CI: 10.2-15.7]) reported a higher prevalence of special equipment use than White, non-Hispanics (7.7% [95% CI: 6.2-8.3]). (data not shown)

Demographic Characteristics	Total Disability[a] %	Total Disability[a] 95% Confidence Interval
Total	**28.2**	**(27.0-29.5)**
Age		
18 - 24	13.3	(10.0-17.4)
25 - 34	18.4	(15.3-21.9)
35 - 44	24.2	(21.1-27.6)
45 - 54	31.4	(28.6-34.4)
55 - 64	35.9	(33.3-38.6)
65 - 74	36.8	(33.8-39.9)
75 +	44.6	(40.9-48.4)
Gender		
Male	26.2	(24.4-28.1)
Female	30.1	(28.5-31.8)
Race/Ethnicity		
White non-Hispanic	28.8	(27.4-30.2)
Black non-Hispanic	26.0	(22.6-29.8)
Other non-Hispanic	25.3	(20.2-31.1)
Hispanic	26.5	(19.4-35.0)
Household Income		
< $20,000	41.8	(38.3-45.3)
$20,000 - $34,999	31.1	(28.3-34.0)
$35,000 - $49,999	25.6	(22.7-28.7)
$50,000 - $74,999	22.9	(20.0-26.2)
≥ $75,000	18.3	(16.1-20.7)
Health Insurance		
Insured	28.9	(27.5-30.2)
Uninsured	24.7	(21.4-28.3)

[a] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required the use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem.
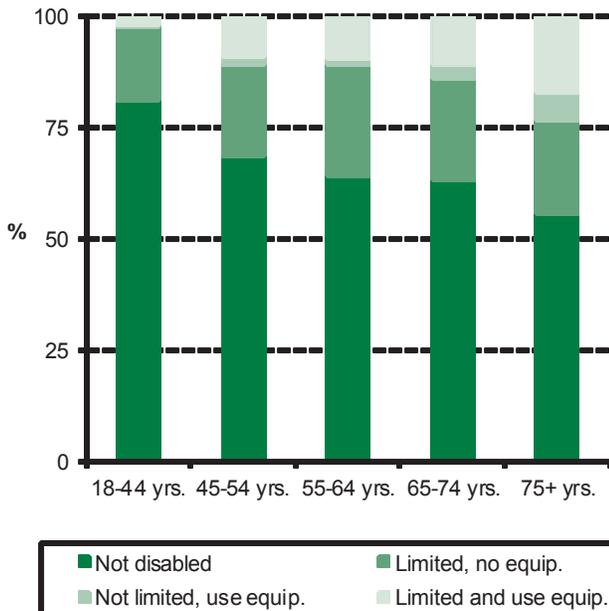
♦ When assessing disability by age group and severity, Michigan adults 75 years and older reported more severe disability (i.e., both activities limited and use of special equipment) when compared to all other age groups.

**Disability by Age Group and Severity
Michigan, 2011**

Legend: Not disabled; Limited, no equip.; Not limited, use equip.; Limited and use equip.

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Overweight and obesity have been proven to increase the risk of many diseases and health conditions such as high blood pressure, diabetes, coronary heart disease, stroke, gallbladder disease, high cholesterol, and some forms of cancer.[5] Overweight is defined as having a body mass index (BMI) between 25.0 and 29.9, and obesity is defined as a BMI greater than or equal to 30.0. BMI is defined as weight in kilograms divided by height in meters squared (w/h^2) and is calculated based on self-reported height and weight.

♦ In 2011, an estimated 31.3% of Michigan adults were classified as obese, with an additional 34.2% of Michigan adults being classified as overweight. The prevalence of obesity in Michigan is higher than the U.S. median prevalence (27.8%), while the prevalence of overweight is comparable to that of the U.S. median (35.7%).

♦ The prevalence of obesity increased with age, but dropped within the 75+ years age group.

♦ The prevalence of obesity was similar by gender and health insurance status.

♦ Black, non-Hispanic adults (41.0%) reported a significantly higher prevalence of obesity than White, non-Hispanics (29.7%). This disparity has persisted for several years.

♦ Disabled adults (42.3%) were more likely to be classified as obese than non-disabled adults (27.1%)

♦ The HP 2020 target for obesity among adults is set at 30.6%. In order to meet this target, the obesity prevalence among Michigan adults will need to decrease by only 0.7 percentage points during the next nine years.[6]

Demographic Characteristics	Obese[a]	
	%	95% Confidence Interval
Total	**31.3**	**(30.0-32.6)**
Age		
18 - 24	17.3	(13.8-21.5)
25 - 34	31.3	(27.6-35.2)
35 - 44	33.3	(29.9-37.0)
45 - 54	34.7	(31.8-37.7)
55 - 64	38.0	(35.3-40.7)
65 - 74	34.0	(31.0-37.2)
75 +	24.2	(21.0-27.8)
Gender		
Male	31.9	(29.9-33.9)
Female	30.7	(28.9-32.4)
Race/Ethnicity		
White non-Hispanic	29.7	(28.3-31.2)
Black non-Hispanic	41.0	(36.9-45.2)
Other non-Hispanic	24.8	(19.2-31.4)
Hispanic	36.7	(28.7-45.4)
Household Income		
< $20,000	36.6	(33.3-40.1)
$20,000 - $34,999	32.4	(29.5-35.3)
$35,000 - $49,999	28.6	(25.4-32.0)
$50,000 - $74,999	32.6	(29.2-36.2)
≥ $75,000	28.2	(25.6-31.0)
Health Insurance		
Insured	30.6	(29.3-32.1)
Uninsured	34.8	(31.1-38.8)
Disability		
Disabled	42.3	(39.7-45.0)
Not disabled	27.1	(25.6-28.7)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)^2]. Weight and height were self-reported. Pregnant women were excluded.
[a] Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0.
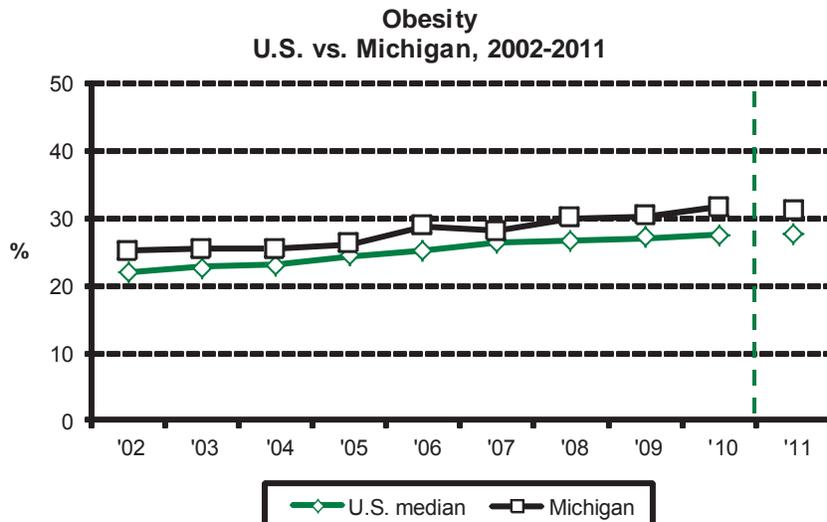
Obesity
U.S. vs. Michigan, 2002-2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

No Health Care Coverage

Adults who do not have health care coverage are less likely to access health care services and are more likely to delay getting needed medical attention.[7]

♦ In 2011, an estimated 18.3% of Michigan adults aged 18-64 years reported having no health care coverage. The prevalence of no health care coverage among Michigan adults 18-64 years of age is currently two percentage points less than the U.S. median prevalence (21.3%).

♦ The prevalence of no health care coverage decreased with age and increasing household income level.

♦ Males (20.4%) reported a significantly higher prevalence of no health care coverage than females (16.2%), while both Black, non-Hispanics (27.6%) and Hispanics (28.3%) reported a higher prevalence than White, non-Hispanics (15.9%).

♦ The prevalence of no health care coverage was similar by disability status.

♦ The HP 2020 target for health care coverage is to have 100% of adults insured by 2020. Since the prevalence of no health care coverage among Michigan adults 18-64 years of age is currently at 18.3%, this prevalence will need to decrease by an average of two percentage points each year in order to meet the HP 2020 goal.[6]

Demographic Characteristics	No Health Care Coverage Among Adults 18-64 Years[a]	
	%	95% Confidence Interval
Total	18.3	(17.0-19.6)
Age		
18 - 24	24.0	(19.9-28.6)
25 - 34	24.5	(21.2-28.2)
35 - 44	19.4	(16.5-22.6)
45 - 54	14.2	(12.2-16.4)
55 - 64	11.6	(9.9-13.5)
Gender		
Male	20.4	(18.4-22.5)
Female	16.2	(14.6-18.0)
Race/Ethnicity		
White non-Hispanic	15.9	(14.6-17.3)
Black non-Hispanic	27.6	(23.5-32.2)
Other non-Hispanic	19.9	(14.6-26.7)
Hispanic	28.3	(20.4-37.8)
Household Income		
< $20,000	34.7	(30.9-38.7)
$20,000 - $34,999	29.4	(25.9-33.2)
$35,000 - $49,999	15.3	(12.3-19.0)
$50,000 - $74,999	6.0	(4.3-8.4)
≥ $75,000	3.9	(2.8-5.5)
Disability		
Disabled	17.4	(15.0-20.1)
Not disabled	18.5	(17.0-20.1)

[a] Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare or Indian Health Services.

No Health Care Coverage Among Adults Aged 18 Years and Older U.S. vs. Michigan, 2002-2011
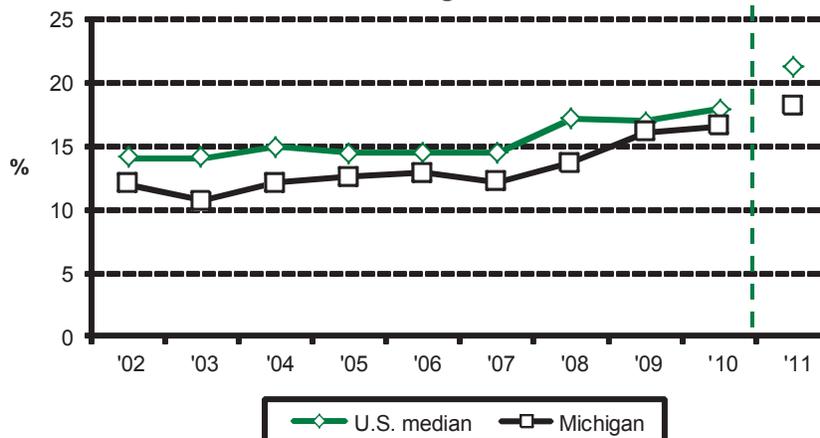
Legend: U.S. median, Michigan

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Limited Health Care Coverage

Two additional indicators related to health care access are: 1) not having a personal doctor or health care provider and 2) having had a time during the past 12 months when you needed to see a doctor but could not because of the cost. These indicators are very important to health care due to the fact that increases in access to primary care have been shown to substantially improve health-related outcomes.[8]

♦ In 2011, an estimated 15.5% of Michigan adults reported not having a personal health care provider, while 16.5% reported not seeing the doctor within the past 12 months due to cost.

♦ The prevalence of both of these indicators decreased with age and increasing household income level.

♦ Males (21.6%) were more likely to not have a personal health care provider than females (9.8%), but females (18.0%) were more likely than males (14.8%) to have not seen a doctor within the past 12 months due to cost.

♦ Both Black, non-Hispanics (19.4% and 23.2%, respectively) and Hispanics (26.2% and 29.3%, respectively) were more likely than White, non-Hispanics (13.9% and 14.7%, respectively) to not have a personal health care provider and to have not seen a doctor within the past 12 months due to cost.

♦ Uninsured adults (46.7% and 46.8%, respectively) were more likely to not have a personal health care provider and to have not went to a doctor within the past 12 months due to cost when compared in insured adults (9.8% and 11.0%, respectively).

Demographic Characteristics	No Personal Health Care Provider[a]		No Health Care Access Due to Cost[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**15.5**	**(14.4-16.7)**	**16.5**	**(15.4-17.6)**
Age				
18 - 24	28.4	(24.0-33.3)	16.5	(13.2-20.4)
25 - 34	28.8	(25.2-32.7)	23.4	(20.2-27.0)
35 - 44	17.6	(14.9-20.6)	20.4	(17.5-23.6)
45 - 54	12.2	(10.3-14.4)	19.6	(17.1-22.3)
55 - 64	7.2	(5.8-8.9)	13.3	(11.6-15.3)
65 - 74	6.0	(4.4-7.9)	7.1	(5.7-8.9)
75 +	1.7	(1.1-2.7)	5.3	(3.9-7.0)
Gender				
Male	21.6	(19.7-23.5)	14.8	(13.3-16.5)
Female	9.8	(8.6-11.1)	18.0	(16.6-19.6)
Race/Ethnicity				
White non-Hispanic	13.9	(12.7-15.2)	14.7	(13.6-15.9)
Black non-Hispanic	19.4	(16.2-23.2)	23.2	(19.7-27.0)
Other non-Hispanic	25.0	(18.9-32.3)	16.4	(12.5-21.1)
Hispanic	26.2	(19.2-34.7)	29.3	(21.8-38.0)
Household Income				
< $20,000	24.4	(21.3-27.8)	31.6	(28.4-35.0)
$20,000 - $34,999	20.2	(17.6-23.2)	22.2	(19.6-25.1)
$35,000 - $49,999	11.9	(9.6-14.7)	13.2	(10.9-16.0)
$50,000 - $74,999	10.3	(8.1-13.0)	10.6	(8.4-13.2)
≥ $75,000	8.4	(6.7-10.5)	3.9	(2.8-5.4)
Health Insurance				
Insured	9.8	(8.8-10.9)	11.0	(10.1-12.0)
Uninsured	46.7	(42.8-50.7)	46.8	(42.9-50.8)
Disability				
Disabled	10.4	(8.7-12.3)	23.6	(21.4-26.1)
Not disabled	17.4	(16.0-18.9)	13.6	(12.4-14.8)

[a] Among all adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider
[b] Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost.

Health Care Access Indicators by Gender Michigan, 2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

6
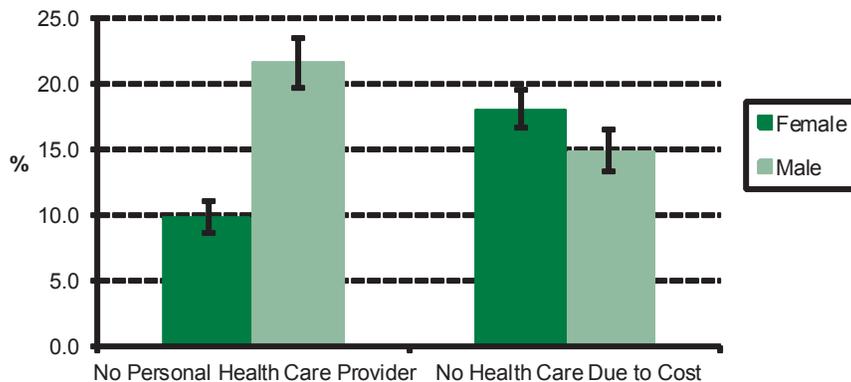
No Leisure-Time Physical Activity

Regular physical activity among adults has been shown to reduce the risk of many diseases including cardiovascular disease, diabetes, colon and breast cancers, and osteoporosis. Keeping physically active also helps to control weight, maintain health bones, muscles, and joints, and can relieve symptoms of depression.[9]

♦ In 2011, an estimated 23.6% of Michigan adults reported no leisure-time physical activity within the past month. The prevalence of no leisure-time physical activity among Michigan adults is currently less than the U.S. median prevalence (26.2%) for this indicator.

♦ The prevalence of no leisure-time physical activity increased with age and decreased with increasing household income level.

♦ White, non-Hispanics (22.2%) reported a significantly lower prevalence of no leisure-time physical activity than Black, non-Hispanics (30.1%), while disabled adults (34.5%) reported a higher prevalence than non-disabled adults (19.5%).

♦ The prevalence of no leisure-time physical activity was similar by gender and health insurance status.

♦ The HP 2020 target for no leisure-time physical activity among adults is set at 32.6%. The prevalence of no leisure-time physical activity among Michigan adults is currently nine percentage points below this goal so if Michigan can maintain the current prevalence for this indicator the healthy people target will easily be met by 2020.[6]

Demographic Characteristics	No Leisure-Time Physical Activity[a]	
	%	95% Confidence Interval
Total	**23.6**	**(22.4-24.8)**
Age		
18 - 24	15.8	(12.4-19.9)
25 - 34	16.9	(14.1-20.0)
35 - 44	21.4	(18.5-24.7)
45 - 54	27.0	(24.2-29.9)
55 - 64	25.5	(23.1-28.1)
65 - 74	28.6	(25.6-31.7)
75 +	34.4	(30.8-38.1)
Gender		
Male	22.1	(20.3-23.9)
Female	25.0	(23.4-26.6)
Race/Ethnicity		
White non-Hispanic	22.2	(20.9-23.5)
Black non-Hispanic	30.1	(26.3-34.2)
Other non-Hispanic	24.5	(18.5-31.6)
Hispanic	28.9	(21.6-37.5)
Household Income		
< $20,000	32.4	(29.2-35.9)
$20,000 - $34,999	29.0	(26.3-31.9)
$35,000 - $49,999	19.5	(16.9-22.5)
$50,000 - $74,999	18.6	(16.0-21.5)
≥ $75,000	15.8	(13.7-18.2)
Health Insurance		
Insured	22.9	(21.7-24.2)
Uninsured	27.2	(23.9-30.9)
Disability		
Disabled	34.5	(32.1-36.9)
Not disabled	19.5	(18.1-20.8)

[a] Among all adults, the proportion who reported not participating in any leisure-time physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise during the past month.

No Leisure-Time Physical Activity
U.S. vs. Michigan, 2002-2011
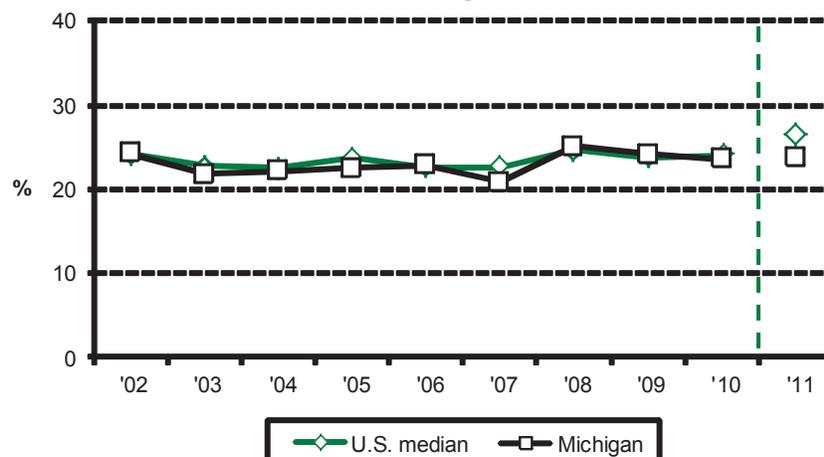
Legend: U.S. median, Michigan

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Adequate Physical Activity

In 2008, The U.S. Department of Health and Human Services released the new physical activity guidelines for Americans. These guidelines recommend that adults participate in moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities **and** also participate in muscle strengthening activities on two or more days per week.[10]

♦ In 2011, an estimated 19.7% of Michigan adults met both the aerobic and muscle strengthening components of the new physical activity guidelines (i.e., adequate physical activity).

♦ When assessing each component individually, an estimated 53.5% (95% CI: 52.1-55.0) of Michigan adults met the aerobic physical activity component, while 28.8% (95% CI: 27.5-30.1) met the muscle strengthening component.

♦ Adequate physical activity decreased with increasing age and increased with increasing household income level.

♦ Males (21.6%) reported a significantly higher prevalence of adequate physical activity than females (17.9%), while disabled adults (15.3%) were less likely to have reported adequate physical activity than non-disabled adults (21.5%).

♦ Michigan is currently above the HP 2020 targets for the aerobic (MI: 53.5% vs. HP 2020: 47.9%) and muscle strengthening (MI: 28.8% vs. HP 2020: 24.1%) components, but is below the combined aerobic and muscle strengthening target (MI: 19.7% vs. HP 2020: 20.1%).[6]

♦ 62.3% of Michigan adults reported participating in at least one component of the physical activity guidelines (Aerobic only = 33.7%; Muscle strengthening only = 8.9%; Both aerobic and muscle strengthening = 19.7%).

Demographic Characteristics	Adequate Physical Activity[a]	
	%	95% Confidence Interval
Total	**19.7**	**(18.6-20.9)**
Age		
18 - 24	25.8	(21.5-30.6)
25 - 34	21.5	(18.3-25.1)
35 - 44	19.5	(16.8-22.6)
45 - 54	18.4	(16.2-20.9)
55 - 64	17.8	(15.9-19.9)
65 - 74	17.6	(15.3-20.3)
75 +	16.5	(13.9-19.4)
Gender		
Male	21.6	(19.9-23.5)
Female	17.9	(16.5-19.4)
Race/Ethnicity		
White non-Hispanic	19.6	(18.3-20.8)
Black non-Hispanic	19.1	(16.0-22.6)
Other non-Hispanic	23.3	(17.1-30.8)
Hispanic	22.2	(15.7-30.6)
Household Income		
< $20,000	15.1	(12.6-17.9)
$20,000 - $34,999	16.7	(14.5-19.3)
$35,000 - $49,999	18.4	(15.8-21.4)
$50,000 - $74,999	20.5	(17.7-23.6)
≥ $75,000	26.1	(23.5-28.8)
Health Insurance		
Insured	19.9	(18.7-21.2)
Uninsured	17.9	(15.1-21.1)
Disability		
Disabled	15.3	(13.5-17.4)
Not disabled	21.5	(20.1-22.9)

[a] Among all adults, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities and also participate in muscle strengthening activities on two or more days per week.

Adequate Physical Activity Guidelines
Michigan, 2011
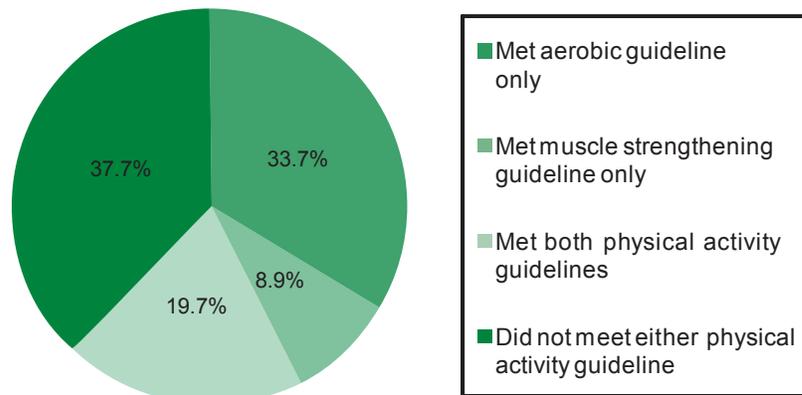
Pie chart:
- 33.7% Met aerobic guideline only
- 8.9% Met muscle strengthening guideline only
- 19.7% Met both physical activity guidelines
- 37.7% Did not meet either physical activity guideline

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Adequate Fruit and Vegetable Consumption

A healthy diet rich in fruits and vegetables may reduce the risk of cancer and other chronic conditions.[11] Adequate fruit and vegetable consumption is defined as consuming fruits (including 100% fruit juice, and fresh, frozen, and canned fruit) and vegetables (including cooked or canned beans, dark green vegetables, orange-colored vegetables, and other vegetables) on an average of five or more times per day.

♦ In 2011, an estimated 17.8% of Michigan adults reported consuming fruits and vegetables five or more times per day.

♦ Adequate fruit and vegetable consumption was more prevalent within the younger and older age groups, and increased with increasing household income level.

♦ Males (13.5%) reported a significantly lower prevalence of adequate fruit and vegetable consumption than females (21.9%).

♦ White, non-Hispanic females (21.4%) reported a significantly higher prevalence of adequate fruit and vegetable consumption than White, non-Hispanic males (12.8%).

♦ Black, non-Hispanic females (25.8%) also reported a significantly higher prevalence Black, non-Hispanic males (13.9%).

♦ Adequate fruit and vegetable consumption was similar by race/ethnicity, health insurance status, and disability status.

Demographic Characteristics	Adequate Fruit and Vegetable Consumption[a]	
	%	95% Confidence Interval
Total	**17.8**	**(16.8-19.0)**
Age		
18 - 24	20.7	(16.6-25.4)
25 - 34	21.8	(18.6-25.4)
35 - 44	13.9	(11.5-16.7)
45 - 54	16.8	(14.7-19.0)
55 - 64	17.6	(15.5-19.8)
65 - 74	14.6	(12.7-16.8)
75 +	20.9	(18.0-24.1)
Gender		
Male	13.5	(12.0-15.2)
Female	21.9	(20.4-23.5)
Race/Ethnicity		
White non-Hispanic	17.2	(16.1-18.5)
Black non-Hispanic	20.4	(17.0-24.3)
Other non-Hispanic	19.9	(14.5-26.7)
Hispanic	18.8	(12.9-26.6)
Household Income		
< $20,000	16.5	(14.0-19.3)
$20,000 - $34,999	14.4	(12.4-16.7)
$35,000 - $49,999	16.4	(13.9-19.3)
$50,000 - $74,999	18.4	(15.7-21.4)
≥ $75,000	22.5	(20.1-25.2)
Health Insurance		
Insured	18.4	(17.3-19.7)
Uninsured	14.7	(12.0-17.8)
Disability		
Disabled	17.2	(15.3-19.3)
Not disabled	18.2	(16.9-19.6)

[a] Among all adults, the proportion whose total reported consumption of fruits (including 100% fruit juice) and vegetables was five or more times per day.

Adequate Fruit and Vegetable Consumption by Race and Gender Michigan, 2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.
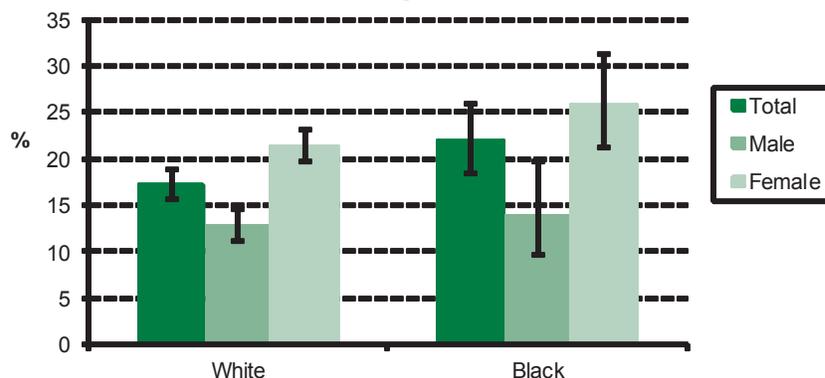
Cigarette Smoking

Cigarette smoking is the leading cause of preventable death in the United States, accounting for more than 440,000 deaths each year.[12-13]

♦ In 2011, an estimated 23.3% of Michigan adults reported that they currently smoke cigarettes on a regular basis.

♦ Current smoking decreased with both increasing age and household income level.

♦ Males (27.2%) reported a significantly higher prevalence of current smoking than females (19.6%).

♦ Current smoking was similar by race/ethnicity.

♦ Disabled adults (29.3%) were more likely to have reported current smoking than non-disabled adults (21.0%).

♦ Uninsured adults (37.8%) were more likely to have reported current smoking than insured adults (20.7%).

♦ The HP 2020 target for current smoking among adults is set at 12.0%. In order to meet this target, the current smoking prevalence among Michigan adults will need to decrease by 11.3 percentage points over the next nine years.[6]

♦ Prior to the BRFSS methodology changes, the prevalence of current smoking among Michigan adults was following a decreasing trend. In 2011, the prevalence of current smoking in Michigan (23.3%) was comparable to the U.S. median prevalence (21.2%).

Demographic Characteristics	Current Smoking[a]	
	%	95% Confidence Interval
Total	**23.3**	**(22.0-24.6)**
Age		
18 - 24	24.3	(20.0-29.1)
25 - 34	33.1	(29.2-37.2)
35 - 44	26.1	(22.9-29.6)
45 - 54	28.0	(25.2-31.0)
55 - 64	19.3	(17.1-21.8)
65 - 74	14.1	(11.9-16.6)
75 +	4.9	(3.4-6.9)
Gender		
Male	27.2	(25.1-29.3)
Female	19.6	(18.2-21.2)
Race/Ethnicity		
White non-Hispanic	22.8	(21.4-24.3)
Black non-Hispanic	27.1	(23.3-31.3)
Other non-Hispanic	24.5	(19.0-31.0)
Hispanic	20.0	(14.0-27.6)
Household Income		
< $20,000	35.3	(31.8-38.8)
$20,000 - $34,999	26.4	(23.6-29.4)
$35,000 - $49,999	21.5	(18.5-24.8)
$50,000 - $74,999	18.5	(15.6-21.7)
≥ $75,000	13.2	(11.1-15.8)
Health Insurance		
Insured	20.7	(19.4-22.1)
Uninsured	37.8	(34.0-41.8)
Disability		
Disabled	29.3	(26.8-31.9)
Not disabled	21.0	(19.5-22.6)

[a] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days.

**Current Cigarette Smoking
U.S. vs. Michigan, 2002-2011**
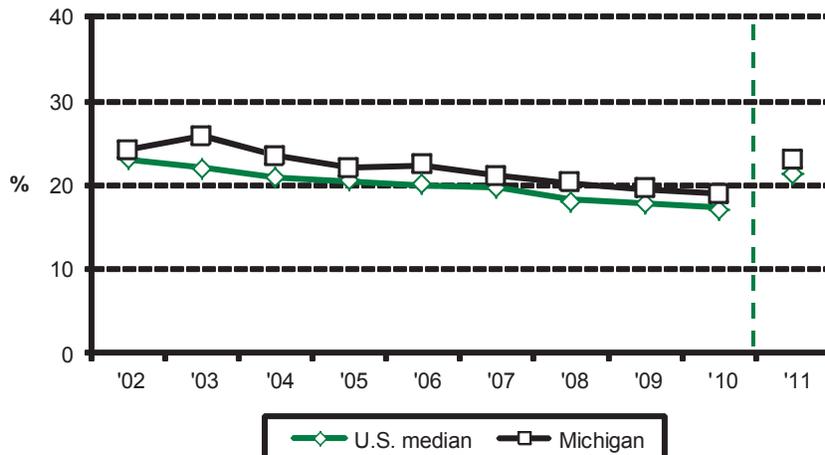
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Alcohol Consumption

Alcohol abuse has been associated with serious health problems, such as cirrhosis of the liver, high blood pressure, stroke, and some types of cancer, and can also increase the risk for motor vehicle accidents, injuries, violence, and suicide.[14] Binge drinking is defined as consuming five or more alcoholic drinks per occasion (for men) or four or more alcoholic drinks per occasion (for women) at least once in the past month, while heavy drinking is defined as consuming an average of more than two alcoholic drinks per day for men or more than one alcoholic drink per day for women in the past month.

♦ In 2011, an estimated 57.6% (95% CI: 56.2-59.1) of Michigan adults reported some form of alcohol consumption within the past month. Furthermore, an estimated 19.7% of Michigan adults reported binge drinking on at least one occasion within the past month, and 7.0% (95% CI: 6.3-7.9) reported heavy drinking over the past month.

♦ Both binge drinking and heavy drinking are more prevalent within the younger age groups and decrease significantly within the older age groups.

♦ Males (27.3%) reported a significantly higher prevalence of binge drinking than females (12.7%).

♦ Males (8.7% [95% CI: 7.5-10.1]) also reported a higher prevalence of heavy drinking than females (5.5% [95% CI: 4.7-6.4]).

♦ Binge drinking was similar by race/ethnicity and household income level.

♦ Uninsured adults (25.8%) were more likely to have reported binge drinking than insured adults (18.7%).

Demographic Characteristics	Binge Drinking[a]	
	%	95% Confidence Interval
Total	**19.7**	**(18.5-20.9)**
Age		
18 - 24	30.8	(26.2-35.8)
25 - 34	30.6	(26.9-34.6)
35 - 44	21.3	(18.4-24.5)
45 - 54	20.5	(18.1-23.1)
55 - 64	13.9	(12.1-15.9)
65 - 74	7.4	(5.8-9.3)
75 +	4.0	(2.5-6.3)
Gender		
Male	27.3	(25.3-29.3)
Female	12.7	(11.4-14.0)
Race/Ethnicity		
White non-Hispanic	20.4	(19.1-21.8)
Black non-Hispanic	15.6	(12.4-19.4)
Other non-Hispanic	20.5	(14.8-27.7)
Hispanic	21.6	(15.4-29.3)
Household Income		
< $20,000	19.4	(16.5-22.8)
$20,000 - $34,999	18.4	(15.9-21.2)
$35,000 - $49,999	17.3	(14.7-20.3)
$50,000 - $74,999	21.2	(18.3-24.4)
≥ $75,000	24.6	(22.0-27.4)
Health Insurance		
Insured	18.7	(17.5-20.0)
Uninsured	25.8	(22.4-29.5)
Disability		
Disabled	13.8	(12.0-15.8)
Not disabled	22.0	(20.6-23.5)

[a] Among all adults, the proportion who reported consuming five or more drinks per occasion (for males) or four or more drinks per occasion (for women) at least once in the previous month.

Binge Drinking
U.S. vs. Michigan, 2002-2011
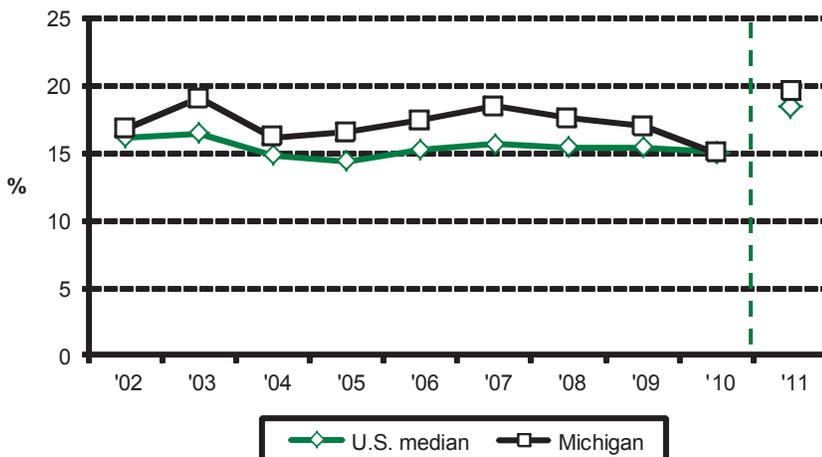
♦ The addition of the BRFSS cell phone population in 2011 has resulted in a more accurate measure for binge drinking. The prevalence of binge drinking among Michigan adults (19.7%) is currently only 1.4 percentage points higher than the U.S. median prevalence (18.3%).

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Seatbelt Use

Seatbelt use has been proven to save lives and prevent injuries. In 2010, 22,187 people died in United States' motor vehicle traffic crashes, of which 9,934 (44.8%) were unrestrained. In 2010, seat belts saved an estimated 12,546 lives among motor vehicle occupants 5 years of age and older within the United States.[15]

- In 2011, an estimated 88.7% of Michigan adults reported always using their seat belt when driving or riding in a car.

- Seatbelt use increased slightly with age and increasing household income level.

- Males (84.7%) reported a significantly lower prevalence of seatbelt use than females (92.5%).

- Seatbelt use was similar by race/ethnicity and disability status.

- Uninsured adults (82.6%) were less likely to have reported seatbelt use than insured adults (89.9%).

- Prior to the BRFSS methodology changes, the prevalence of seatbelt use among Michigan adult males and female were following an increasing trend. In 2011, the prevalence of seatbelt use among Michigan adults (88.7%) was lower than the U.S. median prevalence (93.3%).

Demographic Characteristics	Always Uses a Seatbelt[a]	
	%	95% Confidence Interval
Total	**88.7**	**(87.7-89.7)**
Age		
18 - 24	79.0	(74.3-83.0)
25 - 34	85.5	(82.1-88.3)
35 - 44	89.9	(87.3-92.0)
45 - 54	90.7	(88.7-92.4)
55 - 64	92.2	(90.5-93.6)
65 - 74	92.2	(90.3-93.7)
75 +	91.7	(89.0-93.8)
Gender		
Male	84.7	(82.9-86.4)
Female	92.5	(91.5-93.5)
Race/Ethnicity		
White non-Hispanic	89.0	(87.9-90.1)
Black non-Hispanic	86.6	(83.1-89.4)
Other non-Hispanic	88.6	(84.2-91.9)
Hispanic	89.8	(83.1-94.1)
Household Income		
< $20,000	85.7	(82.6-88.3)
$20,000 - $34,999	87.8	(85.4-89.9)
$35,000 - $49,999	89.5	(86.9-91.7)
$50,000 - $74,999	88.5	(85.8-90.8)
≥ $75,000	92.7	(91.0-94.2)
Health Insurance		
Insured	89.9	(88.8-90.8)
Uninsured	82.6	(79.0-85.6)
Disability		
Disabled	90.1	(88.2-91.6)
Not disabled	88.2	(86.9-89.4)

[a] Among all adults, the proportion who reported always using a seatbelt when driving or riding in a car.
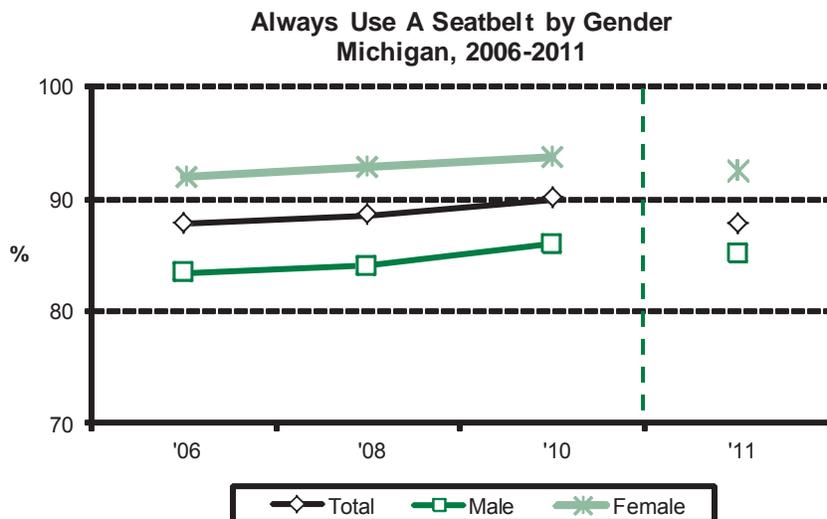
Always Use A Seatbelt by Gender
Michigan, 2006-2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Hypertension Awareness and Medication Use

Adults with high blood pressure are at a higher risk for heart disease, stroke, congestive heart failure, and end-stage renal disease.[16]

♦ In 2011, an estimated 34.2% of Michigan adults reported ever being told by a doctor that they had high blood pressure (HBP). Furthermore, 76.5% (95% CI: 74.4-78.5) of Michigan adults with HBP were currently taking medications for their HBP.

♦ The prevalence of HBP increased significantly with age and decreased with increasing household income level.

♦ The prevalence of high blood pressure was similar by gender, but females (82.6% [95% CI: 80.0-84.9]) were more likely than males (70.6% [95% CI: 67.4-73.7]) to report current HBP medication use.

♦ White, non-Hispanics (33.9%) reported a significantly lower prevalence of high blood pressure than Black, non-Hispanics (41.0%).

♦ Disabled adults (51.5%) were more likely to have reported high blood pressure than non-disabled adults (27.4%), and insured adults (35.6%) were more likely to have reported high blood pressure than uninsured adults (26.4%).

♦ The HP 2020 target for high blood pressure among adults is set at 26.9%. In order to meet this target, the high blood pressure prevalence among Michigan adults will need to decrease by 7.3 percentage points over the next nine years.[6]

♦ Prior to the BRFSS methodology changes, the prevalence of high blood pressure among Michigan adults was fairly stable over time. In 2011, the prevalence of high blood pressure in Michigan (34.2%) was slightly higher than the U.S. median prevalence (30.8%).

Demographic Characteristics	Ever Told HBP[a]	
	%	95% Confidence Interval
Total	**34.2**	**(32.9-35.4)**
Age		
18 - 24	7.1	(5.0-10.2)
25 - 34	15.9	(13.2-19.1)
35 - 44	21.6	(18.7-24.8)
45 - 54	36.3	(33.4-39.3)
55 - 64	50.3	(47.5-53.0)
65 - 74	61.7	(58.5-64.8)
75 +	67.7	(64.3-71.0)
Gender		
Male	35.8	(33.9-37.8)
Female	32.6	(31.0-34.3)
Race/Ethnicity		
White non-Hispanic	33.9	(32.6-35.4)
Black non-Hispanic	41.0	(37.0-45.1)
Other non-Hispanic	24.4	(19.5-30.1)
Hispanic	26.4	(19.7-34.3)
Household Income		
< $20,000	40.9	(37.5-44.3)
$20,000 - $34,999	38.5	(35.7-41.4)
$35,000 - $49,999	34.6	(31.4-38.0)
$50,000 - $74,999	33.7	(30.4-37.1)
≥ $75,000	26.1	(23.7-28.7)
Health Insurance		
Insured	35.6	(34.2-37.0)
Uninsured	26.4	(23.2-29.9)
Disability		
Disabled	51.5	(48.9-54.1)
Not disabled	27.4	(26.0-28.9)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed.

Ever Told High Blood Pressure U.S. vs. Michigan, 2001-2011
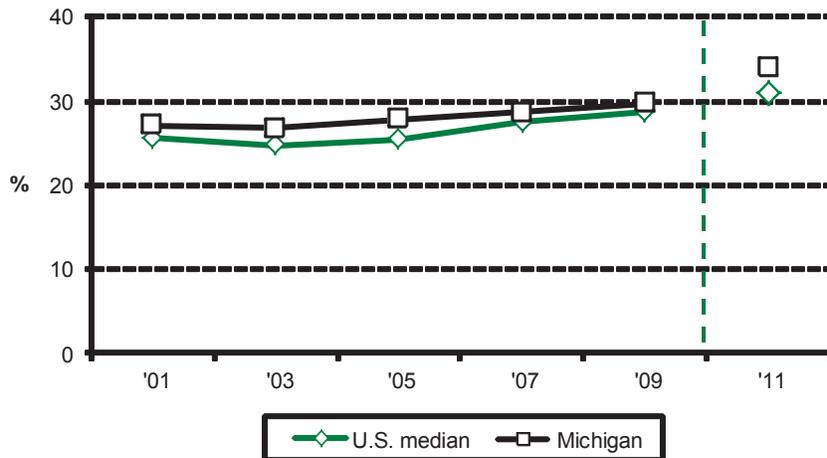
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Routine Checkup in Past Year

A yearly routine checkup is a great way to remain proactive about one's health. The benefits of having an annual checkup include early diagnosis and treatment of existing conditions and prevention of future medical problems.[17]

♦ In 2011, an estimated 66.5% of Michigan adults reporting having a routine medical checkup within the past year.

♦ The prevalence of having a routine checkup within the past year increased with age.

♦ Males (61.3%) reported a significantly lower prevalence of having a routine checkup within the past year than females (71.3%).

♦ White, non-Hispanics (65.6%) reported a significantly lower prevalence of having had a routine checkup within the past year than Black, non-Hispanics (75.2%).

♦ Insured and disabled adults (71.6% and 72.1%, respectively) were more likely to have had a routine checkup within the past year than uninsured and non-disabled adults (38.5% and 64.3%, respectively).

♦ Michigan adults who had a routine check up within the past year were more likely to have had their cholesterol checked within the past 5 years (87.5% vs. 57.3%), a flu vaccine within the past year (61.1% vs. 40.2%), and ever had a pneumonia vaccine (70.3% vs. 48.0%) when compared to adults who had not had a routine checkup within the past year.

Demographic Characteristics	Had a Routine Checkup Within The Past Year[a]	
	%	95% Confidence Interval
Total	**66.5**	**(65.1-67.8)**
Age		
18 - 24	60.3	(55.2-65.3)
25 - 34	53.8	(49.7-57.8)
35 - 44	56.4	(52.6-60.0)
45 - 54	64.7	(61.7-67.6)
55 - 64	75.3	(72.8-77.6)
65 - 74	83.3	(80.7-85.6)
75 +	87.1	(84.4-89.4)
Gender		
Male	61.3	(59.2-63.5)
Female	71.3	(69.6-73.0)
Race/Ethnicity		
White non-Hispanic	65.6	(64.1-67.2)
Black non-Hispanic	75.2	(71.2-78.8)
Other non-Hispanic	59.6	(52.1-66.7)
Hispanic	60.2	(51.4-68.4)
Household Income		
< $20,000	63.3	(59.7-66.8)
$20,000 - $34,999	62.3	(59.1-65.4)
$35,000 - $49,999	68.0	(64.3-71.4)
$50,000 - $74,999	69.0	(65.4-72.3)
≥ $75,000	68.1	(65.2-70.9)
Health Insurance		
Insured	71.6	(70.2-73.0)
Uninsured	38.5	(34.7-42.4)
Disability		
Disabled	72.1	(69.6-74.5)
Not disabled	64.3	(62.6-66.0)

[a] Among all adults, the proportion who reported that they had a routine medical checkup within the past year.

Health Screenings and Immunizations by Routine Checkup Status Michigan, 2011
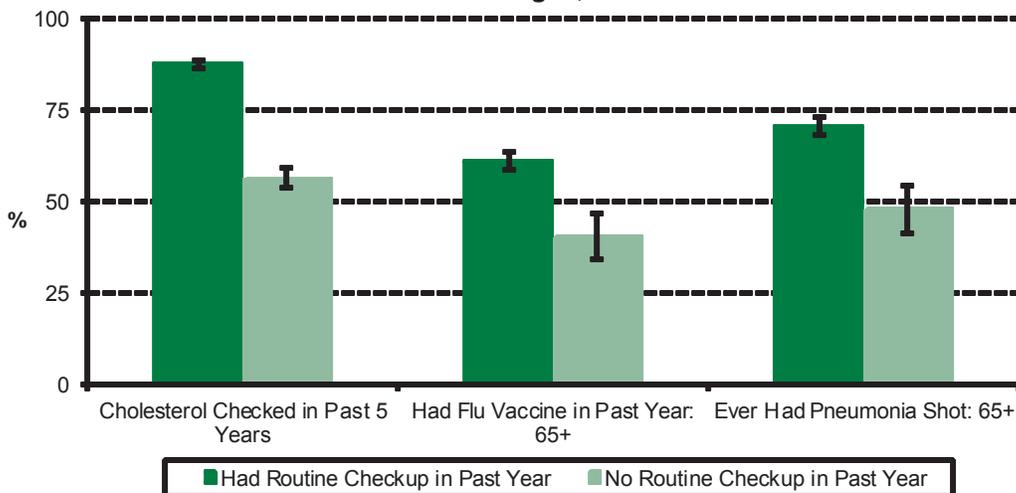
Legend: ■ Had Routine Checkup in Past Year ■ No Routine Checkup in Past Year

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Cholesterol Screening and Awareness

High blood cholesterol is a major risk factor for coronary heart disease, the leading cause of death in the United States.[18]

- In 2011, an estimated 76.7% of Michigan adults reported having their cholesterol checked within the past five years.

- Among Michigan adults who have ever had their cholesterol checked, an estimated 41.8% have been told by a doctor that they had high blood cholesterol.

- The prevalence of cholesterol screening with the past five years increased with age and increasing household income level.

- Females were more likely than males to have had a cholesterol screening within the past five years (80.5% vs. 72.7%), but were less likely to have been told they had high cholesterol (39.5% vs. 44.4%).

- White, non-Hispanics (43.4%) reported a significantly higher prevalence of high cholesterol than Black, non-Hispanics (35.4%).

- Insured and disabled adults (42.8% and 54.3%, respectively) were more likely to have been diagnosed with high cholesterol than uninsured and non-disabled adults (34.3% and 36.9%, respectively).

- The HP 2020 target for cholesterol screening within the past five years is set at 82.1%. In order to meet this target, the cholesterol screening prevalence among Michigan adults will need to increase by 5.4 percentage points over the next nine years.[6]

- Prior to the BRFSS methodology changes, the prevalence of high cholesterol among Michigan adults had started to stabilize. In 2011, the prevalence of high cholesterol in Michigan (41.8%) was slightly higher than the U.S. median prevalence (38.4%).

Demographic Characteristics	Cholesterol Checked Within the Past 5 Years[a]		Ever Told High Cholesterol[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**76.7**	**(75.3-78.1)**	**41.8**	**(40.4-43.3)**
Age				
18 - 24	38.9	(33.9-44.2)	11.8	(7.3-18.6)
25 - 34	59.5	(55.4-63.6)	17.7	(14.2-21.7)
35 - 44	74.2	(70.6-77.4)	30.9	(27.2-34.8)
45 - 54	85.0	(82.5-87.2)	43.3	(40.2-46.5)
55 - 64	92.4	(90.7-93.8)	55.4	(52.6-58.1)
65 - 74	95.3	(93.4-96.6)	62.9	(59.8-65.9)
75 +	95.4	(93.4-96.8)	55.0	(51.2-58.7)
Gender				
Male	72.7	(70.5-74.8)	44.4	(42.2-46.7)
Female	80.5	(78.8-82.2)	39.5	(37.7-41.4)
Race/Ethnicity				
White non-Hispanic	78.0	(76.5-79.5)	43.4	(41.8-45.0)
Black non-Hispanic	75.5	(71.3-79.2)	35.4	(31.3-39.8)
Other non-Hispanic	65.8	(57.6-73.2)	33.5	(27.4-40.3)
Hispanic	64.6	(55.7-72.6)	38.7	(29.6-48.7)
Household Income				
< $20,000	67.0	(63.2-70.5)	48.0	(44.2-51.8)
$20,000 - $34,999	74.1	(71.0-77.0)	43.7	(40.5-47.0)
$35,000 - $49,999	79.4	(75.8-82.5)	44.5	(40.8-48.4)
$50,000 - $74,999	83.5	(80.0-86.5)	41.4	(37.8-45.1)
≥ $75,000	85.3	(82.7-87.5)	36.0	(33.1-39.0)
Health Insurance				
Insured	81.4	(79.9-82.7)	42.8	(41.3-44.4)
Uninsured	51.3	(47.3-55.4)	34.3	(29.8-39.0)
Disability				
Disabled	84.9	(82.5-87.0)	54.3	(51.6-56.9)
Not disabled	73.8	(72.1-75.5)	36.9	(35.2-38.6)

[a] Among all adults, the proportion who reported that they have had their blood cholesterol checked within the past five years.
[b] Among adults who have had their blood cholesterol checked, the proportion who reported that a doctor, nurse, or other health professional had told them that their cholesterol was high.

Ever Told High Cholesterol U.S. vs. Michigan, 2001-2011
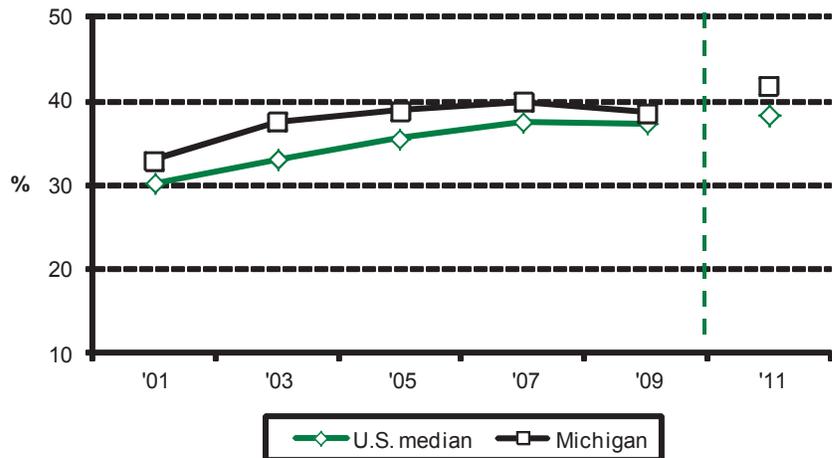
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Immunizations Among Adults 65 Years of Age and Older

Adult immunizations against influenza and pneumo-coccal disease are important health indicators that need to be routinely monitored since morbidity and mortality are associated with both of these diseases within different demographic groups.[19]

♦ In 2011, an estimated 58.0% of Michigan adults ages 65 years and older reported receiving a flu vaccine within the past year, while an estimated 67.1% of this population reported ever receiving a pneumonia vaccine.

♦ The prevalence of receiving these vaccines among the 65+ year old age group was similar by gender.

♦ White, non-Hispanics were more likely than Black, non-Hispanics to have received a flu vac-cine within the past year (58.3% vs. 47.0%) and a pneumonia vaccine ever (68.4% vs. 56.2%).

♦ Disabled adults (74.9%) were more likely to have ever received a pneumonia vaccine than non-disabled adults (61.8%).

♦ Prior to the BRFSS methodology changes, the prevalence of ever having had a pneumonia vac-cine among Michigan adult was increasing slightly. In 2011, the prevalence of ever having had a pneumonia vaccine among Michigan adults (67.1%) was lower than the U.S. median preva-lence (70.0%).

Demographic Characteristics	Had Flu Vaccine in Past Year[a]		Ever Had Pneumonia Vaccine[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**58.0**	**(55.5-60.4)**	**67.1**	**(64.7-69.4)**
Age				
65 - 74	54.7	(51.4-57.9)	61.3	(58.0-64.4)
75 +	62.0	(58.3-65.5)	74.0	(70.4-77.4)
Gender				
Male	56.4	(52.4-60.3)	63.2	(59.1-67.1)
Female	59.2	(56.1-62.1)	69.9	(67.0-72.7)
Race/Ethnicity				
White non-Hispanic	58.3	(55.7-60.9)	68.4	(65.8-70.9)
Black non-Hispanic	47.0	(39.2-55.0)	56.2	(48.1-64.0)
Other non-Hispanic	68.7	(56.3-78.9)	64.1	(50.8-75.6)
Hispanic	--[c]	---	--[c]	---
Household Income				
< $20,000	50.7	(44.4-57.0)	65.8	(59.5-71.6)
$20,000 - $34,999	55.0	(50.5-59.5)	67.5	(63.0-71.6)
$35,000 - $49,999	63.6	(57.7-69.1)	70.0	(63.9-75.5)
$50,000 - $74,999	59.4	(52.2-66.1)	65.2	(58.2-71.7)
≥ $75,000	64.1	(56.7-70.9)	68.9	(61.5-75.5)
Disability				
Disabled	61.6	(57.7-65.3)	74.9	(71.3-78.2)
Not disabled	55.6	(52.4-58.7)	61.8	(58.6-64.9)

[a] Among adults aged 65 years and older, the proportion who reported that they had a flu vaccine, either by injection in the arm or sprayed in the nose during the past 12 months.
[b] Among adults aged 65 years and older, the proportion who reported that they ever had a pneumo-coccal vaccine.
[c] The denominator in this subgroup was less than 50.

Ever Had a Pneumococcal Vaccination Among Adults Aged 65 Years and Older U.S. vs. Michigan, 2002-2011
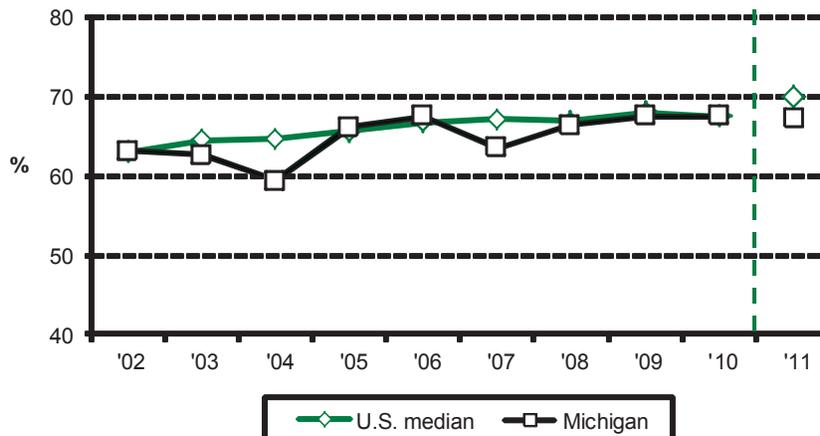
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

HIV Testing

Early awareness of an HIV infection through HIV testing can prevent further spread of the disease, and an early start on antiretroviral therapy can increase the quality of life among those who are living with HIV/AIDS.[20]

- In 2011, an estimated 41.3% of Michigan adults reported ever being tested for HIV.

- Females (44.8%) reported a significantly higher prevalence of HIV testing than males (37.8%).

- Black, non-Hispanics (64.6%) reported a significantly higher prevalence of HIV testing than White, non-Hispanics (36.5%).

- The prevalence of HIV testing decreased with increasing household income level.

- Uninsured adults (47.6%) were more likely to have been tested for HIV than insured adults (40.1%), while disabled adults (46.3%) were more likely to be tested than non-disabled adults (39.6%).

- Prior to the BRFSS methodology changes, the prevalence of HIV testing among Michigan adults was stable over time. It is unclear how these methodology changes will impact the trend in HIV testing over future survey years.

Demographic Characteristics	Ever Had an HIV Test[a]	
	%	95% Confidence Interval
Total	**41.3**	**(39.6-43.0)**
Age		
18 - 24	30.1	(25.6-35.0)
25 - 34	56.4	(52.2-60.4)
35 - 44	55.5	(51.6-59.2)
45 - 54	39.2	(36.2-42.3)
55 - 64	23.0	(20.7-25.5)
Gender		
Male	37.8	(35.4-40.3)
Female	44.8	(42.5-47.0)
Race/Ethnicity		
White non-Hispanic	36.5	(34.7-38.3)
Black non-Hispanic	64.6	(59.7-69.2)
Other non-Hispanic	42.5	(34.6-50.7)
Hispanic	51.8	(42.5-61.0)
Household Income		
< $20,000	51.1	(46.8-55.3)
$20,000 - $34,999	44.4	(40.4-48.4)
$35,000 - $49,999	41.2	(36.9-45.6)
$50,000 - $74,999	40.2	(36.2-44.3)
≥ $75,000	39.0	(35.9-42.2)
Health Insurance		
Insured	40.1	(38.3-41.9)
Uninsured	47.6	(43.5-51.8)
Disability		
Disabled	46.3	(43.0-49.5)
Not disabled	39.6	(37.7-41.5)

[a] Among adults aged 18-64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation.

Ever Tested for HIV
Among Adults Aged 18-64 Years
Michigan, 2002-2011
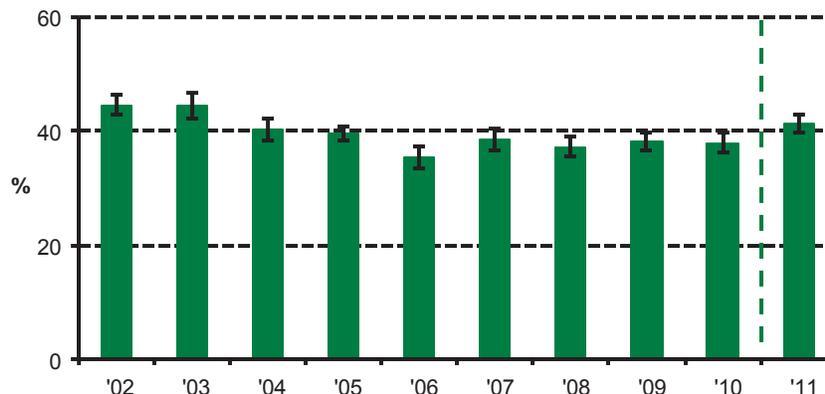
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Asthma in Adults

Asthma is a chronic inflammatory disorder of the lungs, and is characterized by wheezing, coughing, difficulty breathing, and chest tightness. Allergies, a family history of asthma or allergy, low birth weight, and exposure to tobacco smoke are just a few of the potential risk factors that are associated with the development of asthma.[21]

♦ In 2011, an estimated 14.8% of Michigan adults reported that they were ever diagnosed with asthma and 9.9% reported that they currently have asthma.

♦ The prevalence of both lifetime and current asthma decreased with age and increasing household income level.

♦ Females reported a significantly higher prevalence of both lifetime (16.8% vs. 12.7%) and current asthma (12.1% and 7.6%) than males.

♦ The prevalence for lifetime and current asthma were similar by race/ethnicity and health insurance status.

♦ Disabled adults (16.6%) were more likely to have current asthma than non-disabled adults (7.0%).

♦ Prior to the BRFSS methodology changes, the prevalence of lifetime asthma among Michigan adult was increasing over time. In 2011, the prevalence of ever being diagnosed with asthma among Michigan adults (14.8%) was slightly higher than the U.S. median prevalence (13.6%).

Demographic Characteristics	Lifetime Asthma[a]		Current Asthma[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**14.8**	**(13.8-15.9)**	**9.9**	**(9.1-10.8)**
Age				
18 - 24	17.9	(14.4-22.0)	10.1	(7.5-13.6)
25 - 34	16.8	(14.0-20.0)	10.5	(8.2-13.2)
35 - 44	14.5	(12.0-17.3)	9.7	(7.7-12.1)
45 - 54	14.6	(12.4-17.0)	10.3	(8.5-12.5)
55 - 64	13.8	(12.0-15.8)	10.1	(8.5-11.9)
65 - 74	14.4	(12.2-16.9)	10.5	(8.6-12.7)
75 +	10.0	(8.0-12.6)	6.7	(4.9-9.1)
Gender				
Male	12.7	(11.4-14.3)	7.6	(6.5-8.8)
Female	16.8	(15.4-18.2)	12.1	(10.9-13.4)
Race/Ethnicity				
White non-Hispanic	14.2	(13.1-15.3)	9.4	(8.5-10.4)
Black non-Hispanic	17.5	(14.5-20.9)	12.2	(9.7-15.2)
Other non-Hispanic	17.6	(12.4-24.2)	11.2	(7.1-17.2)
Hispanic	15.2	(10.0-22.5)	10.7	(6.3-17.5)
Household Income				
< $20,000	19.2	(16.6-22.1)	14.5	(12.2-17.1)
$20,000 - $34,999	14.2	(12.2-16.5)	9.4	(7.7-11.3)
$35,000 - $49,999	13.8	(11.5-16.5)	8.7	(6.8-11.1)
$50,000 - $74,999	12.5	(10.2-15.2)	8.4	(6.6-10.8)
≥ $75,000	12.6	(10.7-14.9)	7.6	(6.1-9.4)
Health Insurance				
Insured	14.8	(13.7-15.9)	9.9	(9.0-10.9)
Uninsured	14.8	(12.2-17.8)	9.8	(7.6-12.4)
Disability				
Disabled	21.4	(19.4-23.6)	16.6	(14.7-18.6)
Not disabled	11.9	(10.8-13.1)	7.0	(6.1-7.9)

[a] Among all adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma
[b] Among all adults, the proportion who reported that they still have asthma.

**Lifetime Adult Asthma
U.S. vs. Michigan, 2002-2011**
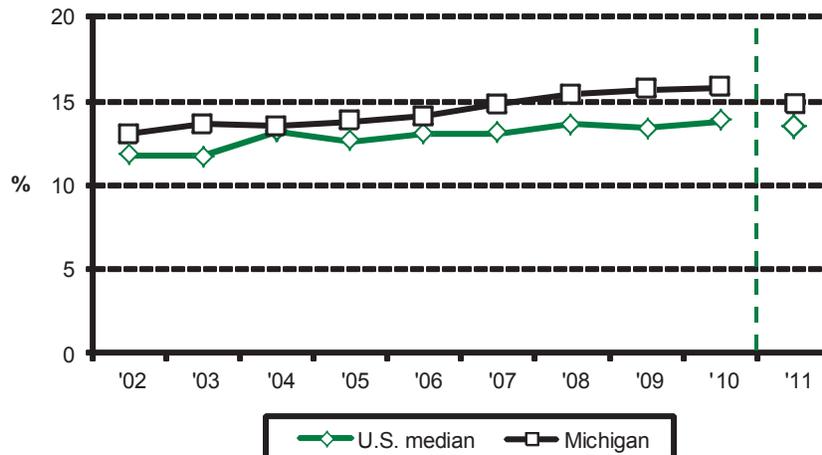
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Asthma in Children

Although asthma can affect people of all ages, in most cases it begins during childhood. Children with a family history of asthma and allergy are at a higher risk of developing asthma during childhood.[22]

- Based on proxy information provided by the adult respondent, the estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor that they had asthma for 2011 was 14.5% and an estimated 10.0% currently had asthma.

- The prevalence of both lifetime and current asthma increased with age and decreased with increasing household income level.

- The prevalence of lifetime and current asthma among children were similar by gender and race/ethnicity.

- White, non-Hispanic boys and girls reported a similar prevalence of lifetime asthma. The prevalence of lifetime and current asthma were also similar among Black, non-Hispanic boys and girls.

Demographic Characteristics	Lifetime Asthma[a]		Current Asthma[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**14.5**	**(12.9-16.3)**	**10.0**	**(8.6-11.6)**
Age				
0 - 4	7.4	(5.2-10.5)	4.8	(3.1-7.3)
5 - 9	14.6	(11.3-18.6)	10.8	(8.1-14.3)
10 - 14	20.1	(16.4-24.3)	14.2	(10.9-18.3)
15 - 17	17.3	(13.9-21.3)	10.4	(7.9-13.6)
Gender				
Boy	15.8	(13.4-18.5)	9.8	(7.9-12.1)
Girl	13.1	(11.0-15.5)	10.2	(8.3-12.5)
Race/Ethnicity				
White non-Hispanic	13.1	(11.3-15.0)	8.7	(7.3-10.4)
Black non-Hispanic	19.7	(14.7-25.9)	14.4	(10.1-20.0)
Other non-Hispanic	17.8	(11.9-26.0)	12.2	(7.3-19.8)
Hispanic	12.2	(7.2-19.7)	9.2	(4.8-16.7)
Household Income				
< $20,000	18.6	(13.9-24.4)	14.2	(10.1-19.5)
$20,000 - $34,999	14.4	(10.8-18.9)	10.1	(7.1-14.1)
$35,000 - $49,999	15.0	(10.5-21.0)	12.9	(8.6-18.8)
$50,000 - $74,999	11.9	(8.5-16.2)	7.3	(4.8-11.0)
≥ $75,000	14.2	(11.4-17.5)	8.3	(6.2-11.1)

[a] Estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor, nurse, or other health care professional that they had asthma, using proxy information from the adult respondent.
[b] Estimated proportion of Michigan children aged 0-17 years who still have asthma, using proxy information from the adult respondent.

Lifetime Child Asthma by Race and Gender
Michigan, 2011
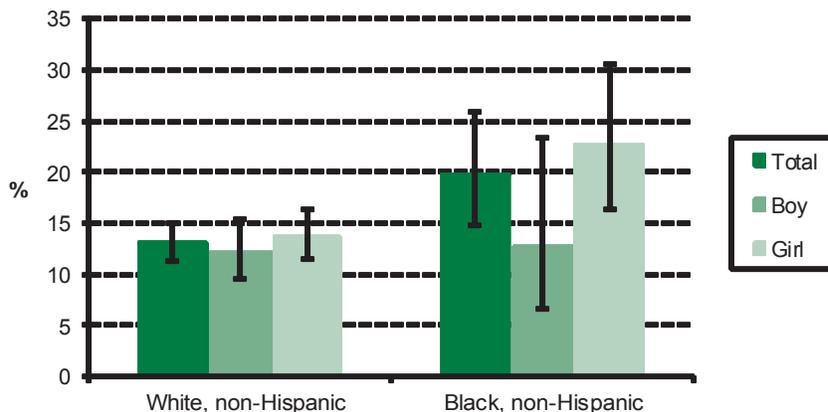
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease (COPD) is a progressive disease that usually results in coughing, wheezing, shortness of breath, chest tightness, and other symptoms. Cigarette smoking is the leading cause of COPD.[23]

♦ In 2011, an estimated 8.0% of Michigan adults reported ever being told by a doctor that they had COPD.

♦ The prevalence of COPD increased with age and decreased with increasing household income level.

♦ Females (9.1%) reported a significantly higher prevalence of COPD than males (6.8%).

♦ The prevalence of COPD was similar by race/ethnicity.

♦ Disabled adults (17.7%) were more likely to have been diagnosed with COPD than non-disabled adults (4.2%).

♦ White, non-Hispanic men and women reported similar prevalence of COPD. COPD prevalence was also similar among Black, non-Hispanic men and women.

♦ In 2011, the prevalence of COPD among Michigan adults (8.0%) was slightly higher than the U.S. median prevalence (6.1%).

Demographic Characteristics	Ever Told COPD, Emphysema, or Chronic Bronchitis[a]	
	%	95% Confidence Interval
Total	**8.0**	**(7.3-8.7)**
Age		
18 - 24	2.3	(1.2-4.2)
25 - 34	3.6	(2.3-5.7)
35 - 44	5.2	(3.8-7.1)
45 - 54	9.0	(7.3-11.0)
55 - 64	11.1	(9.4-13.1)
65 - 74	14.8	(12.6-17.4)
75 +	14.2	(11.8-17.0)
Gender		
Male	6.8	(5.8-7.9)
Female	9.1	(8.1-10.2)
Race/Ethnicity		
White non-Hispanic	7.9	(7.2-8.8)
Black non-Hispanic	9.9	(7.6-12.7)
Other non-Hispanic	7.1	(4.9-10.1)
Hispanic	3.7	(1.9-7.4)
Household Income		
< $20,000	13.0	(11.0-15.2)
$20,000 - $34,999	10.2	(8.7-12.0)
$35,000 - $49,999	7.2	(5.6-9.2)
$50,000 - $74,999	6.1	(4.5-8.2)
≥ $75,000	3.2	(2.2-4.5)
Health Insurance		
Insured	8.2	(7.5-9.1)
Uninsured	6.8	(5.2-9.0)
Disability		
Disabled	17.7	(15.9-19.7)
Not disabled	4.2	(3.6-4.9)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis.

COPD by Race and Gender
Michigan, 2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.
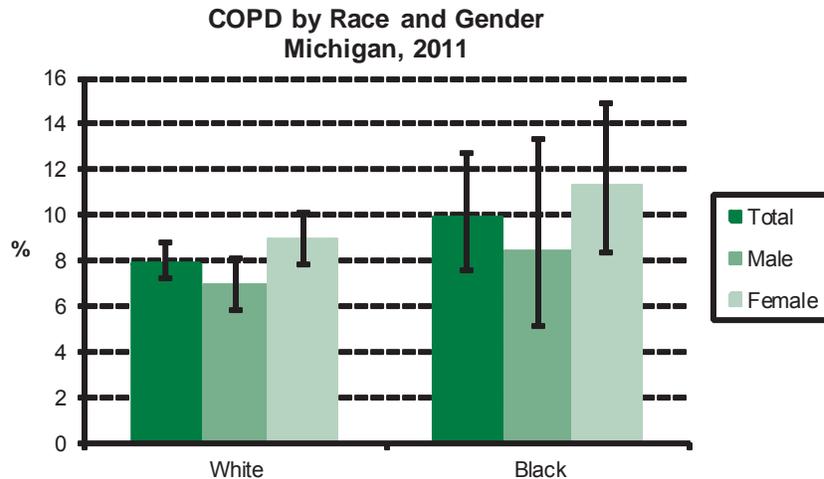
Arthritis

Arthritis and rheumatism are the leading causes of disability within the United States.[24]

- In 2011, an estimated 31.0% of Michigan adults reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.

- Among Michigan adults with arthritis, an estimated 50.6% (95% CI: 48.3-52.9) reported that their usual activities were limited due to their arthritis or joint symptoms.

- Females (34.4%) reported a significantly higher prevalence of arthritis than males (27.3%).

- Hispanics (22.2%) reported a significantly lower prevalence of arthritis than White, non-Hispanics (32.3%).

- The prevalence of arthritis increased with age and decreased with increasing household income level.

- Uninsured adults (22.0%) were less likely to have been diagnosed with arthritis than insured adults (32.8%), while disabled adults (58.7%) were more likely to be have been diagnosed than non-disabled adults (20.3%).

- Prior to the BRFSS methodology changes, the prevalence of arthritis among Michigan adult was beginning to stabilize. It is unclear how these methodology changes will impact the trend in arthritis prevalence over future survey years.

- In 2011, the prevalence of arthritis among Michigan adults (31.0%) was higher than the U.S. median prevalence (24.4%).

Demographic Characteristics	Ever Told Arthritis[a]	
	%	95% Confidence Interval
Total	**31.0**	**(29.8-32.2)**
Age		
18 - 24	4.2	(2.7-6.5)
25 - 34	12.0	(9.5-15.1)
35 - 44	20.8	(17.9-24.0)
45 - 54	32.0	(29.2-35.0)
55 - 64	47.2	(44.5-49.9)
65 - 74	57.0	(53.7-60.1)
75 +	63.8	(60.2-67.2)
Gender		
Male	27.3	(25.5-29.2)
Female	34.4	(32.8-36.1)
Race/Ethnicity		
White non-Hispanic	32.3	(30.9-33.7)
Black non-Hispanic	29.6	(26.1-33.3)
Other non-Hispanic	19.0	(15.2-23.6)
Hispanic	22.2	(15.9-30.1)
Household Income		
< $20,000	36.3	(33.1-39.6)
$20,000 - $34,999	36.4	(33.6-39.3)
$35,000 - $49,999	29.0	(26.0-32.2)
$50,000 - $74,999	30.2	(27.1-33.5)
≥ $75,000	21.8	(19.6-24.3)
Health Insurance		
Insured	32.8	(31.4-34.1)
Uninsured	22.0	(19.0-25.4)
Disability		
Disabled	58.7	(56.1-61.3)
Not disabled	20.3	(19.1-21.6)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.

Ever Told Arthritis
U.S. vs. Michigan, 2001-2011

Legend: U.S. median, Michigan
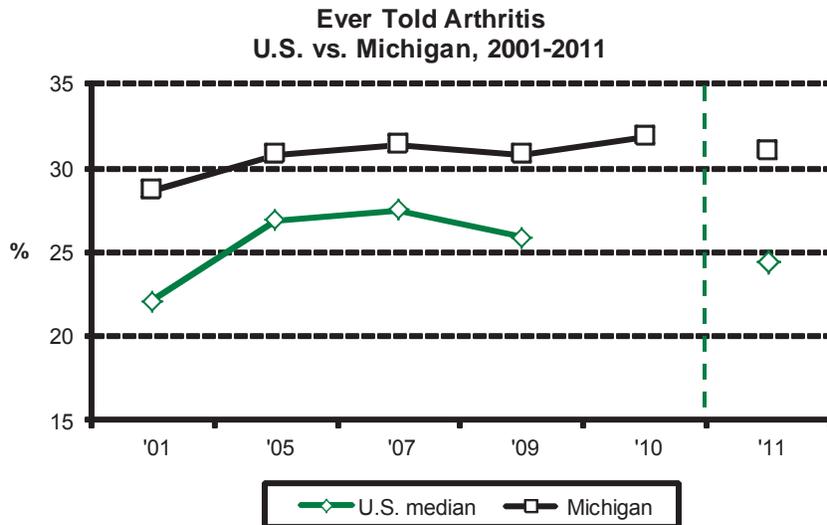
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Cardiovascular Disease

Heart disease and stroke are the first and fourth leading causes of death, respectively, in both Michigan and the United States.[25]

- In 2011, an estimated 5.3% of Michigan adults had ever been told by a doctor that they had a heart attack, 5.0% had ever been told they had angina or coronary heart disease, and 3.3% had ever been told they had a stroke.

- When combining all three measures into one indicator, an estimated 9.5% of Michigan adults have ever been told by a doctor that they had some form of cardiovascular disease.

- The prevalence of all three diseases increased with age and decreased with increasing household income level.

- Males reported higher prevalence than females for heart attack and coronary heart disease, but not stroke.

- The prevalence of all three diseases were similar by race/ethnicity.

- Insured adults were more likely to have been diagnosed with each of the three diseases when compared to uninsured adults.

- Disabled adults were also more likely to have been diagnosed with each of the three diseases when compared to non-disabled adults.

- In 2011, the prevalence of heart attack (5.3%), coronary heart disease (5.0%), and stroke (3.3%) among Michigan adults were all comparable to the U.S. median prevalence (heart attack: 4.4%; coronary heart disease: 4.1%; and stroke: 2.9%).

Demographic Characteristics	Ever Told Heart Attack[a]		Ever Told Angina or Coronary Heart Disease[b]		Ever Told Stroke[c]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Total	**5.3**	**(4.8-5.9)**	**5.0**	**(4.4-5.5)**	**3.3**	**(2.9-3.8)**
Age						
18 - 34	0.3	(0.1-0.7)	0.1	(0.0-0.6)	0.3	(0.1-0.7)
35 - 44	1.3	(0.7-2.6)	1.4	(0.8-2.6)	1.4	(0.8-2.4)
45 - 54	4.5	(3.3-6.2)	3.6	(2.5-5.2)	2.5	(1.6-3.8)
55 - 64	8.6	(7.1-10.5)	8.9	(7.4-10.7)	5.3	(4.0-6.9)
65 - 74	12.4	(10.3-14.9)	10.9	(9.0-13.1)	6.7	(5.2-8.7)
75 +	17.9	(15.0-21.2)	17.6	(14.6-21.0)	11.5	(9.1-14.5)
Gender						
Male	6.4	(5.5-7.4)	5.8	(5.0-6.7)	3.1	(2.5-3.8)
Female	4.3	(3.7-5.1)	4.2	(3.6-4.9)	3.5	(2.9-4.2)
Race/Ethnicity						
White non-Hispanic	5.3	(4.7-5.9)	5.1	(4.5-5.7)	3.0	(2.5-3.5)
Black non-Hispanic	5.1	(3.7-7.1)	3.7	(2.5-5.3)	4.9	(3.4-7.1)
Other non-Hispanic	4.4	(2.6-7.1)	5.3	(3.4-8.4)	3.4	(2.1-5.4)
Hispanic	7.1	(3.5-14.0)	6.6	(3.0-13.9)	3.1	(1.2-7.9)
Household Income						
< $20,000	8.7	(7.1-10.7)	6.7	(5.4-8.4)	6.8	(5.3-8.7)
$20,000 - $34,999	7.1	(5.8-8.7)	6.9	(5.6-8.5)	4.7	(3.7-6.0)
$35,000 - $49,999	3.9	(2.9-5.3)	3.2	(2.4-4.5)	2.2	(1.5-3.2)
$50,000 - $74,999	3.4	(2.4-4.8)	3.8	(2.7-5.2)	1.1	(0.6-2.0)
≥ $75,000	2.4	(1.6-3.6)	3.6	(2.6-4.9)	1.2	(0.7-2.3)
Health Insurance						
Insured	5.9	(5.2-6.5)	5.5	(4.9-6.1)	3.5	(3.0-4.0)
Uninsured	2.2	(1.5-3.4)	2.1	(1.3-3.1)	2.2	(1.4-3.6)
Disability						
Disabled	11.4	(9.9-13.1)	10.9	(9.4-12.5)	7.7	(6.4-9.2)
Not disabled	2.9	(2.5-3.5)	2.7	(2.3-3.2)	1.6	(1.3-1.9)

Among all adults, the proportion who had ever been told by a doctor that: [a] they had a heart attack or myocardial infarction, [b] they had angina or coronary heart disease, or [c] they had a stroke.

Cardiovascular Disease by Gender Michigan, 2011
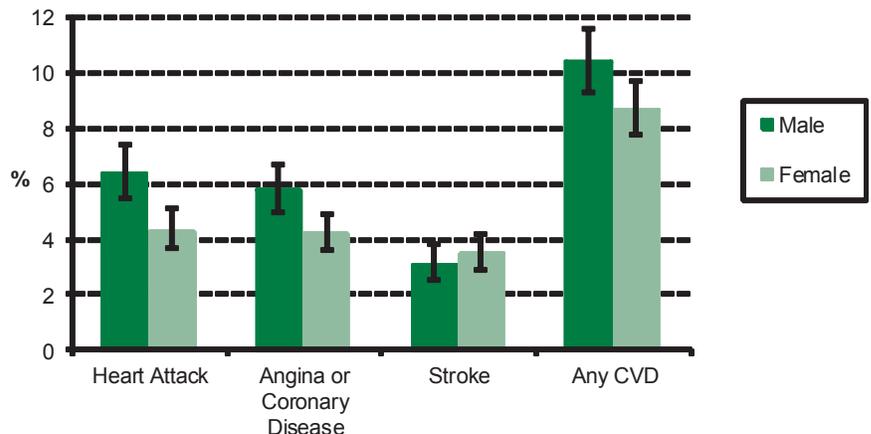
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Cancer

Cancer is the second leading cause of death in both Michigan and the United States.[25] There are more than 100 different types of cancer and it is estimated that there will be approximately 1.6 million new cases of cancer within the following year.[26]

- In 2011, an estimated 5.6% of Michigan adults had ever been told by a doctor that they had skin cancer, and 7.3% reported ever being diagnosed with a type of cancer other than skin cancer.

- When combining these two measures into one indicator, an estimated 11.8% of Michigan adults had ever been told by a doctor that they had some form of cancer.

- The prevalence of cancer increased with age and was similar by household income level.

- Males (10.3%) reported a significantly lower prevalence of cancer than females (13.3%).

- White, non-Hispanics (13.6%) reported a significantly higher prevalence of cancer than both Black, non-Hispanics (5.1%) and Hispanics (5.1%).

- Insured adults and disabled adults reported a higher cancer prevalence than uninsured and non-disabled adults, respectively.

- In 2011, the prevalence for skin cancer (5.6%) and other types of cancer (7.3%) were comparable to the U.S. median prevalence (skin cancer: 5.8% and other cancers: 6.6%).

Demographic Characteristics	Ever Told Skin Cancer[a]		Ever Told Any Other Types of Cancer[b]		Ever Told Cancer[c]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Total	**5.6**	**(5.1-6.1)**	**7.3**	**(6.7-7.9)**	**11.8**	**(11.1-12.6)**
Age						
18 - 34	0.6	(0.3-1.4)	1.8	(1.1-2.9)	2.3	(1.5-3.5)
35 - 44	0.7	(0.3-1.5)	3.2	(2.2-4.7)	3.9	(2.8-5.5)
45 - 54	3.7	(2.7-5.1)	4.7	(3.6-6.2)	8.3	(6.8-10.2)
55 - 64	8.1	(6.8-9.7)	10.5	(8.9-12.3)	17.6	(15.6-19.8)
65 - 74	14.1	(12.0-16.4)	16.3	(14.0-18.8)	27.7	(25.0-30.7)
75 +	22.0	(19.1-25.2)	23.7	(20.7-27.0)	38.9	(35.4-42.5)
Gender						
Male	5.5	(4.8-6.4)	5.7	(4.9-6.6)	10.3	(9.3-11.4)
Female	5.6	(4.9-6.4)	8.8	(7.9-9.8)	13.3	(12.2-14.5)
Race/Ethnicity						
White non-Hispanic	6.7	(6.1-7.4)	8.1	(7.4-8.8)	13.6	(12.7-14.5)
Black non-Hispanic	0.6	(0.1-2.2)	4.6	(3.5-6.0)	5.1	(3.8-6.8)
Other non-Hispanic	2.1	(1.1-3.9)	5.4	(2.8-10.2)	7.1	(4.2-11.8)
Hispanic	2.8	(0.8-8.9)	3.7	(1.6-8.4)	5.1	(2.4-10.4)
Household Income						
< $20,000	3.8	(2.8-5.1)	8.2	(6.7-9.9)	11.0	(9.3-13.0)
$20,000 - $34,999	7.0	(5.9-8.4)	7.9	(6.6-9.3)	13.7	(12.0-15.6)
$35,000 - $49,999	6.2	(5.0-7.8)	8.4	(6.7-10.5)	12.7	(10.7-15.0)
$50,000 - $74,999	5.9	(4.6-7.6)	6.2	(4.9-8.0)	11.5	(9.6-13.7)
≥ $75,000	5.2	(4.2-6.4)	5.1	(4.1-6.3)	9.8	(8.4-11.4)
Health Insurance						
Insured	6.2	(5.7-6.9)	8.0	(7.4-8.7)	13.1	(12.3-14.0)
Uninsured	2.1	(1.3-3.2)	3.5	(2.4-5.3)	5.1	(3.7-7.0)
Disability						
Disabled	8.1	(6.9-9.4)	12.0	(10.6-13.6)	18.0	(16.3-19.9)
Not disabled	4.6	(4.1-5.2)	5.6	(5.0-6.3)	9.6	(8.7-10.4)

Among all adults, the proportion who had ever been told by a doctor that: [a] they had skin cancer, [b] they had a form of cancer other than skin cancer, or [c] they had skin cancer or any other type of cancer.

Ever Told Cancer by Race/Ethnicity Michigan, 2011
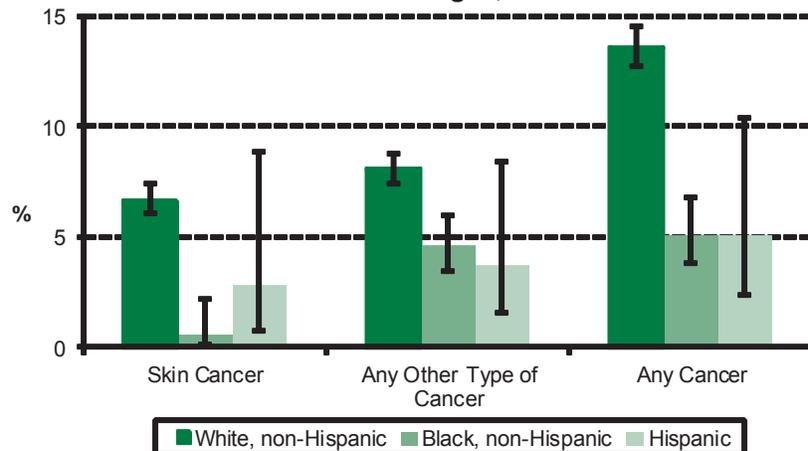
Legend: White, non-Hispanic; Black, non-Hispanic; Hispanic

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Diabetes

In 2010, diabetes was the seventh leading cause of death.[25] Obesity, poor diet, physical inactivity, and high blood pressure are just a few of the known risk factors that are associated with the development of diabetes.[27]

- In 2011, an estimated 10.0% of Michigan adults reported ever being told by a doctor that they had diabetes.

- The prevalence of diabetes increased with age and decreased with increasing household income level.

- Diabetes prevalence was similar by gender, but White, non-Hispanics (9.5%) reported a significantly lower prevalence than Black, non-Hispanics (12.7%).

- Uninsured adults (6.5%) were less likely to have been diagnosed with diabetes than insured adults (10.6%), while disabled adults (18.4%) were more likely to be have been diagnosed than non-disabled adults (6.6%).

- Prior to the BRFSS methodology changes, the prevalence of diabetes among Michigan adults was increasing slightly over time. In 2011, the prevalence of diabetes among Michigan adults (10.0%) was comparable to the U.S. median prevalence (9.6%).

Demographic Characteristics	Ever Told Diabetes[a]	
	%	95% Confidence Interval
Total	**10.0**	**(9.3-10.7)**
Age		
18 - 24	0.2	(0.1-0.8)
25 - 34	2.5	(1.6-4.1)
35 - 44	6.3	(4.6-8.6)
45 - 54	8.9	(7.3-10.7)
55 - 64	17.2	(15.2-19.3)
65 - 74	21.5	(18.9-24.3)
75 +	21.1	(18.3-24.3)
Gender		
Male	10.2	(9.1-11.3)
Female	9.7	(8.8-10.8)
Race/Ethnicity		
White non-Hispanic	9.5	(8.7-10.3)
Black non-Hispanic	12.7	(10.5-15.2)
Other non-Hispanic	9.4	(6.8-12.8)
Hispanic	12.5	(8.2-18.6)
Household Income		
< $20,000	12.1	(10.4-14.1)
$20,000 - $34,999	12.3	(10.6-14.2)
$35,000 - $49,999	9.2	(7.6-11.2)
$50,000 - $74,999	8.6	(6.8-10.9)
≥ $75,000	7.0	(5.6-8.6)
Health Insurance		
Insured	10.6	(9.9-11.5)
Uninsured	6.5	(5.0-8.5)
Disability		
Disabled	18.4	(16.6-20.3)
Not disabled	6.6	(6.0-7.4)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed.
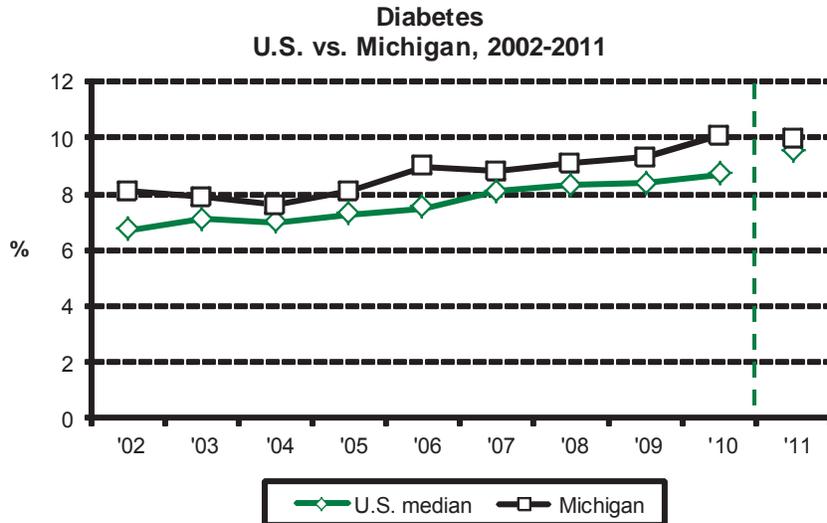
Diabetes
U.S. vs. Michigan, 2002-2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Kidney Disease

Kidney disease is a condition in which the kidneys are damaged and cannot filter blood properly. Adults with diabetes or hypertension are at increased risk of kidney disease. Kidney disease is also a risk factor for the development of cardiovascular disease.[28]

♦ In 2011, an estimated 3.0% of Michigan adults reported ever being told by a doctor that they had kidney disease.

♦ The prevalence of kidney disease increased with age and decreased with increasing household income level.

♦ The prevalence of kidney disease was similar by gender and race/ethnicity.

♦ Disabled adults (6.3%) were more likely to have been diagnosed with kidney disease than non-disabled adults (1.7%).

♦ Michigan adults with diabetes (8.7% [95% CI: 6.9-10.9]) were nearly four times more likely to have being diagnosed with kidney disease than non-diabetic adults (2.4% [95% CI: 2.0-2.9]).

♦ White, non-Hispanic men and women reported a similar prevalence of kidney disease. The prevalence of kidney disease was also similar among Black, non-Hispanic men and women.

♦ In 2011, the prevalence of kidney disease among Michigan adults (3.0%) was comparable to the U.S. median prevalence (2.4%).

Demographic Characteristics	Ever Told Kidney Disease[a]	
	%	95% Confidence Interval
Total	**3.0**	**(2.6-3.5)**
Age		
18 - 24	2.0	(1.1-3.6)
25 - 34	2.1	(1.1-4.0)
35 - 44	1.5	(0.9-2.4)
45 - 54	2.5	(1.8-3.5)
55 - 64	4.0	(3.0-5.3)
65 - 74	4.8	(3.6-6.3)
75 +	6.9	(5.4-8.9)
Gender		
Male	2.4	(1.9-3.1)
Female	3.7	(3.1-4.3)
Race/Ethnicity		
White non-Hispanic	3.0	(2.6-3.5)
Black non-Hispanic	3.3	(2.3-4.8)
Other non-Hispanic	2.7	(1.3-5.2)
Hispanic	3.2	(1.2-8.5)
Household Income		
< $20,000	4.5	(3.4-5.9)
$20,000 - $34,999	3.0	(2.3-4.0)
$35,000 - $49,999	2.6	(1.8-3.8)
$50,000 - $74,999	2.2	(1.4-3.5)
≥ $75,000	1.8	(1.2-2.7)
Health Insurance		
Insured	3.3	(2.8-3.8)
Uninsured	1.7	(1.0-3.0)
Disability		
Disabled	6.3	(5.2-7.6)
Not disabled	1.7	(1.4-2.2)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease.

Kidney Disease by Race and Gender Michigan, 2011
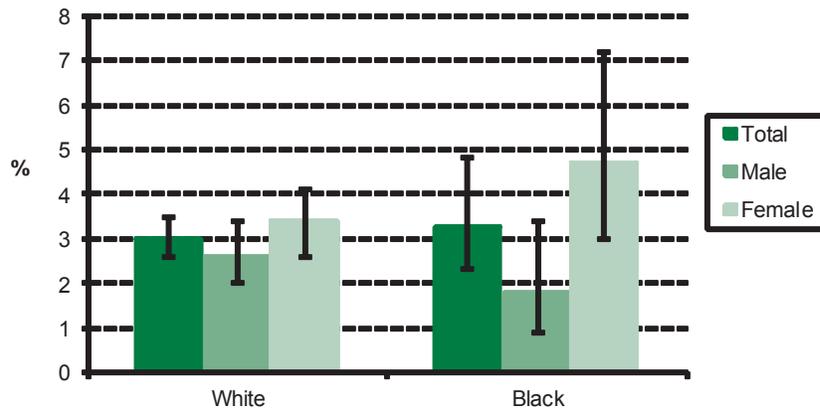
Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Depression

Depression is a common and treatable medical disorder that is more common among individuals with chronic conditions such as obesity, diabetes, and arthritis.[29]

♦ In 2011, an estimated 20.6% of Michigan adults reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.

♦ The prevalence of depression was highest in the middle age groups and decreased with increasing household income level.

♦ Females (25.6%) reported a significantly higher prevalence of depression than males (15.4%).

♦ White, non-Hispanics (21.5%) reported a significantly higher prevalence of depression than Black, non-Hispanics (14.9%).

♦ Disabled adults (36.5%) were more likely to have been diagnosed with depression than non-disabled adults (14.3%).

♦ White, non-Hispanic females reported a significantly higher prevalence of depression than White, non-Hispanic males (15.6%), while the prevalence of depression was similar among Black, non-Hispanic males and females.

♦ In 2011, the prevalence of depression among Michigan adults (20.6%) was higher than the U.S. median prevalence (17.5%).

Demographic Characteristics	Ever Told Depression[a]	
	%	95% Confidence Interval
Total	**20.6**	**(19.5-21.8)**
Age		
18 - 24	19.4	(15.6-24.0)
25 - 34	21.2	(18.0-24.8)
35 - 44	22.4	(19.4-25.7)
45 - 54	23.7	(21.1-26.4)
55 - 64	22.9	(20.7-25.3)
65 - 74	16.4	(14.2-18.8)
75 +	11.4	(9.1-14.1)
Gender		
Male	15.4	(13.8-17.0)
Female	25.6	(24.0-27.3)
Race/Ethnicity		
White non-Hispanic	21.5	(20.2-22.8)
Black non-Hispanic	14.9	(12.2-18.0)
Other non-Hispanic	20.9	(15.4-27.7)
Hispanic	23.0	(16.2-31.5)
Household Income		
< $20,000	30.1	(27.0-33.4)
$20,000 - $34,999	23.1	(20.5-26.0)
$35,000 - $49,999	19.1	(16.5-22.1)
$50,000 - $74,999	16.3	(13.7-19.2)
≥ $75,000	15.1	(13.1-17.4)
Health Insurance		
Insured	20.5	(19.3-21.8)
Uninsured	22.1	(19.0-25.6)
Disability		
Disabled	36.5	(34.0-39.1)
Not disabled	14.3	(13.1-15.6)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.

Depression by Race and Gender Michigan, 2011

Due to BRFSS methodology changes, 2011 estimates cannot be compared to estimates from previous years.

Acknowledgements

1. Research Triangle Institute (RTI). 2008. SUDAAN Language Manual. Release 10.0. 1st edition. Research Triangle Park, NC: RTI.

2. Centers for Disease Control and Prevention. 2012. 2011 BRFSS Summary Data Quality Report. ftp://ftp.cdc.gov/pub/Data/Brfss/2011_Summary_Data_Quality_Report.pdf. (September 2012).

3. Idler E, Benyamini Y. Self-rated Health and Mortality: A Review of 27 Community Studies. J Health Soc Behav. 1997; 38(1): 21-37.

4. U.S. Department of Justice, Civil Rights Division. 2009. A Guide to Disability Rights Laws. http:www.ada.gov/cguide.pdf. (September 2012).

5. Centers for Disease Control and Prevention. 2012. Overweight and Obesity - Causes and Consequences. http://www.cdc.gov/obesity/adult/causes/index.html. (September 2012).

6. U.S. Department of Health and Human Services. 2012. Healthy People 2020 Objective Topic Areas. http://www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf. (September 2012).

7. Hoffman C, Paradise J. 2008. Health Insurance and Access to Health Care in the United States. Ann N Y Acad Sci 1136:149-160.

8. Starfield B, Leiyu S, Macinko J. 2005. Contribution of Primary Care to Health Systems and Health. The Milbank Quarterly 83(3):457-502.

9. Centers for Disease Control and Prevention. 2011. Physical Activity and Health - The Benefits of Physical Activity. http://www.cdc.gov/physicalactivity/everyone/health/index.html. (September 2012).

10. U.S. Department of Health and Human Services. 2008. 2008 Physical Activity Guidelines for Americans. http://www.health.gov/paguidelines/pdf/paguide.pdf. (September 2012).

11. Centers for Disease Control and Prevention. 2012. Nutrition for Everyone - Fruits and Vegetables. http://www.cdc.gov/nutrition/everyone/fruitsandvegetables/index.html. (September 2012).

12. Centers for Disease Control and Prevention. Annual Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses - United States, 2000-2004. MMWR 2008; 57(45):1226-1228.

13. U.S. Department of Health and Human Services. The Health Consequences of Smoking: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004.

14. Centers for Disease Control and Prevention. 2011. Alcohol and Public Health - Alcohol Use and Health. http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm. (September 2012).

15. U.S. Department of Transportation, National Highway Traffic Safety Administration. 2012. Traffic Safety Facts, 2010 Data - Occupant Protection. http://www-nrd.nhtsa.gov/Pubs/811619.pdf. (September 2012).

16. Centers for Disease Control and Prevention. 2012. High Blood Pressure - High Blood Pressure Facts. http://www.cdc.gov/bloodpressure/facts.htm. (September 2012).

17. Centers for Disease Control and Prevention. 2012. Family Health - Regular Checkups are Important. http://www.cdc.gov/family/checkup/. (September 2012).

18. Centers for Disease Control and Prevention. 2012. Cholesterol - Facts. http://www.cdc.gov/cholesterol/facts.htm. (September 2012).

19. Centers for Disease Control and Prevention. 2012. Recommended Adult Immunization Schedule - United States, 2012. MMWR 2012; 61(4):1-7.

20. Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the Use of Antiretroviral Agents in HIV-Infected Adults and Adolescents. U.S. Department of Health and Human Services. http://www.aidsinfo.nih.gov/contentfiles/lvguidelines/adultandadolescentgl.pdf. (September 2012).

21. Centers for Disease Control and Prevention. 2012. Asthma's Impact on the Nation - Data from the CDC National Asthma Control Program. http:www.cdc.gov/asthma/impacts_nation/AsthmaFactSheet.pdf. (September 2012).

22. U.S. Department of Health and Human Services, National Heart Lung and Blood Institute. 2012. Who is at Risk for Asthma? http://www.nhlbi.nih.gov/health/health-topics/topics/asthma/atrisk.html. (September 2012).

23. U.S. Department of Health and Human Services, National Heart Lung and Blood Institute. 2012. What is COPD? http://www.nhlbi.nih.gov/health/health-topics/topics/copd/. (September 2012).

24. Centers for Disease Control and Prevention. 2012. Arthritis: The Nation's Most Common Cause of Disability. http://www.cdc.gov/chronicdisease/resources/publications/AAG/arthritis.htm. (September 2012).

25. Michigan Department of Community Health, Division of Vital Records & Health Statistics. Deaths and Crude Death Rates for the Ten Leading Causes of Death, Michigan and United States Residents, 2010. http://www.mdch.state.mi.us/pha/osr/deaths/causrankcnty.asp. (September 2012).

26. National Cancer Institute. 2012. What is Cancer? Defining Cancer. http://www.cancer.gov/cancertopics/cancerlibrary/what-is-cancer. (September 2012).

27. Centers for Disease Control and Prevention. Diabetes Public Health Resource. 2012. http://www.cdc.gov/diabetes/consumer/learn.htm. (September 2012).

28. Centers for Disease Control and Prevention, Diabetes Public Health Resource - National Kidney Disease Fact Sheet 2010. http://www.cdc.gov/diabetes/pubs/factsheets/kidney.htm. (September 2012).

29. Centers for Disease Control and Prevention. Current Depression Among Adults - United States, 2006 and 2008. MMWR 2010; 59(38):1229-1235.

Michigan Department of Community Health

MDCH

Rick Snyder, Governor
James K. Haveman, Director

Number of copies: 750
Total printing cost: $1,864.86
Price per unit: $2.48